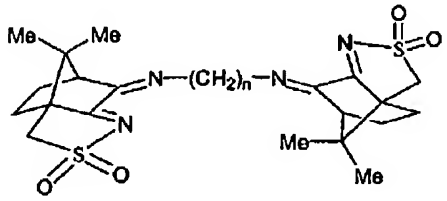
IN THE CLAIMS:

Claims 1-12. (canceled)

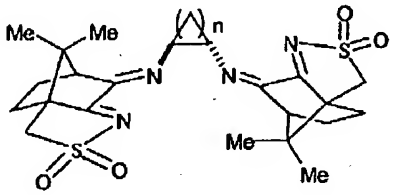
13. (original) A chiral chelating agent having a formula (13) as follows and an enantiomeric isomer thereof:



(13)

wherein n is an integer between 0 and 4.

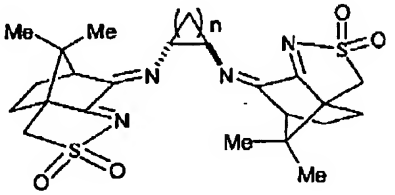
14. (original) A chiral chelating agent having a formula (14) as follows and an enantiomeric isomer thereof:



(14)

wherein n is an integer between 0 and 4.

15. (original) A chiral chelating agent having a formula (15) as follows and an enantiomeric isomer thereof:

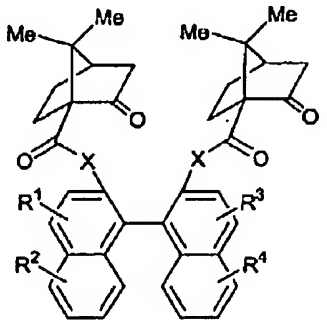


(15)

wherein n is an integer between 0 and 4.

16. (currently amended) A chiral chelating agent having a formula (16) as follows and an a

diastereomeric or an enantiomeric isomer thereof:



(16)

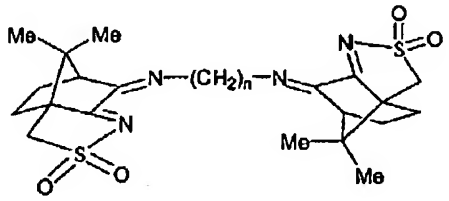
wherein X represents an oxygen atom or a nitrogen atom; R^1, R^2 R^3 and R^4 represent H, methyl, ethyl, a primary, secondary or tertiary straight, branched or cyclic alkyl group having 3-7 carbon atoms, a heterocyclic or aromatic group, an aromatic group substituted at the 2-, 3- or 4-position, an aromatic-like group, a naphthyl or naphthyl-derived group or the above groups substituted with at least a halogen.

Claims 17-23. (canceled)

IN THE CLAIMS:

Claims 1-12. (canceled)

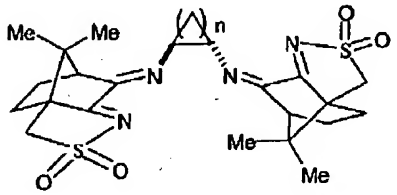
13. (original) A chiral chelating agent having a formula (13) as follows and an enantiomeric isomer thereof:



(13)

wherein n is an integer between 0 and 4.

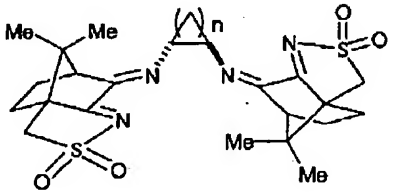
14. (original) A chiral chelating agent having a formula (14) as follows and an enantiomeric isomer thereof:



(14)

wherein n is an integer between 0 and 4.

15. (original) A chiral chelating agent having a formula (15) as follows and an enantiomeric isomer thereof:

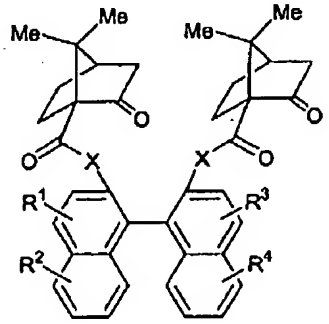


(15)

wherein n is an integer between 0 and 4.

16. (currently amended) A chiral chelating agent having a formula (16) as follows and an a

diastereomeric or an enantiomeric isomer thereof:



(16)

wherein X represents an oxygen atom or a nitrogen atom; R^1, R^2 R^3 and R^4 represent H, methyl, ethyl, a primary, secondary or tertiary straight, branched or cyclic alkyl group having 3-7 carbon atoms, a heterocyclic or aromatic group, an aromatic group substituted at the 2-, 3- or 4-position, an aromatic-like group, a naphthyl or naphthyl-derived group or the above groups substituted with at least a halogen.

Claims 17-23. (canceled)

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L3             1 L1-2

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L5            41 SEA L4

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L8             1 L6-7

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FILE COVERS 1907 - 10 Dec 2004  VOL 141 ISS 25
FILE LAST UPDATED: 9 Dec 2004  (20041209/ED)

 This file contains CAS Registry Numbers for easy and accurate
 substance identification.

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AN   2004:739941  HCAPLUS
DN   141:243058
ED   Entered STN:  10 Sep 2004
TI   Preparation of chiral chelating agent and chiral catalysts for
     stereoselective addition reactions
IN   Chen, Kwunmin; Yang, Kung-shou; Lee, Wei-der; Pan, Jia-fu
PA   Taiwan
SO   U.S. Pat. Appl. Publ., 11 pp.
     CODEN: USXXCO
DT   Patent
LA   English
IC   ICM  C07F001-00
     ICS  B01J031-00
NCL  502162000; 556032000; 546002000; 548101000; 564147000
CC   23-17 (Aliphatic Compounds)
     Section cross-reference(s): 30, 78
FAN.CNT 1
     PATENT NO.          KIND   DATE        APPLICATION NO.        DATE
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PI   US 20041762431      A1     20040909    US 2003-612609         20030701 <--
PRAI TW 2003-92104138    A      20030227  <--
CLASS
 PATENT NO.      CLASS  PATENT FAMILY CLASSIFICATION CODES
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ICS B01J031-00
NCL 502162000; 556032000; 546002000; 548101000; 564147000
OS MARPAT 141:243058
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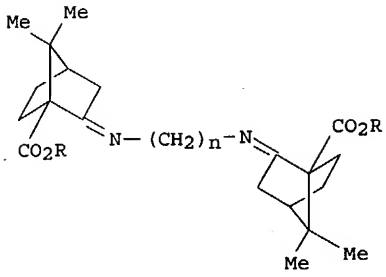

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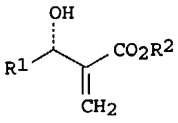

II

AB Chiral chelating agents and chiral catalysts, e.g. I (R = H, Me, Et, primary, secondary or tertiary straight, branched or cyclic C3-7 alkyl; heterocyclic, ,(un)substituted aromatic, aromatic-like, naphthyl, or naphthyl-derived group; n = 0-4) which are formed from the chiral chelating agents and metal, are described. Thus I (n = 2, R = H) was prepared by condensation of (+)-ketopinic acid with ethylenediamine in CHCl3. The complex of I (n = 2, R = H) with La(OTf)3 was screened as catalysts for the asym. Baylis-Hillman reaction of aldehydes R1CHO (R1 = Ph, Me, Et, Me2CH, 4-MeOC6H4, 4-O2NC6H4, cyclohexyl, PhCH2CH2CH2) and acrylate esters H2C:CHCO2R2 (R2 = Me, CMe3, Ph, CH2Ph, 1-naphthyl) to give (S)-alcs. II in 35-97% yields and 6-95% e.e.

ST stereoselective Baylis Hillman reaction chiral chelating agent catalyst; lanthanide camphor deriv catalyst prepn stereoselective addn reaction; aldehyde stereoselective addn acrylate chiral lanthanide catalyst; ketopinic acid condensation diamine

IT Addition reaction
Addition reaction catalysts
(Baylis-Hillman, stereoselective; preparation of chiral chelating agent and chiral catalysts for stereoselective addition reactions)

IT Cycloaddition reaction
Cycloaddition reaction catalysts
(aziridination, stereoselective; preparation of chiral chelating agent and chiral catalysts for stereoselective reactions)

IT Asymmetric synthesis and induction
(preparation of chiral chelating agent and chiral catalysts for stereoselective addition reactions)

IT Aldehydes, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of chiral chelating agent and chiral catalysts for stereoselective addition reactions)

IT Cyclopropanation
(preparation of chiral chelating agent and chiral catalysts for stereoselective reactions)

IT Cycloaddition reaction
Cycloaddition reaction catalysts
(stereoselective; preparation of chiral chelating agent and chiral catalysts for multiple types of stereoselective cycloaddn. reactions)

IT Addition reaction
Addition reaction catalysts
(stereoselective; preparation of chiral chelating agent and chiral catalysts for stereoselective addition reactions)

IT Aldol condensation
Aldol condensation catalysts
Amination
Amination catalysts
Aminohydroxylation
Aminohydroxylation catalysts
Cyclopropanation catalysts
Hydrogenation
Hydrogenation catalysts
Michael reaction
Michael reaction catalysts
Reduction
Reduction catalysts

(stereoselective; preparation of chiral chelating agent and chiral catalysts for stereoselective reactions)
IT 52093-25-1, Europium triflate 52093-26-2, Lanthanum triflate 54761-04-5, Ytterbium triflate
RL: CAT (Catalyst use); USES (Uses)
(preparation of chiral chelating agent and chiral catalysts for stereoselective addition reactions)
IT 404582-34-9P 423770-46-1P
RL: CAT (Catalyst use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(preparation of chiral chelating agent and chiral catalysts for stereoselective addition reactions)
IT 404582-36-1P 423770-45-0P
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(preparation of chiral chelating agent and chiral catalysts for stereoselective addition reactions)
IT 75-07-0, Acetaldehyde, reactions 78-84-2, Isobutyraldehyde 96-33-3, Methyl acrylate 100-52-7, Benzaldehyde, reactions 107-15-3, Ethylenediamine, reactions 123-11-5, 4-Methoxybenzaldehyde, reactions 123-38-6, Propionaldehyde, reactions 555-16-8, 4-Nitrobenzaldehyde, reactions 937-41-7, Phenyl acrylate 1121-22-8, (.+-.)-trans-1,2-Diaminocyclohexane 1663-39-4, tert-Butyl acrylate 2043-61-0, Cyclohexanecarboxaldehyde 2495-35-4, Benzyl acrylate 18328-11-5, 4-Phenylbutanal 20069-66-3 40724-67-2, (+)-Ketopinic acid
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of chiral chelating agent and chiral catalysts for stereoselective addition reactions)
IT 108945-27-3P 112572-93-7P 140238-43-3P 189372-86-9P 221346-91-4P 293307-67-2P 500166-63-2P 500166-64-3P 500166-65-4P 500166-66-5P 500166-67-6P 500166-68-7P 500166-69-8P 500166-70-1P 500166-71-2P 500166-72-3P 500166-73-4P 753007-96-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of chiral chelating agent and chiral catalysts for stereoselective addition reactions)

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FILE LAST UPDATED: 8 DEC 2004 <20041208/UP>
MOST RECENT DERWENT UPDATE: 200479 <200479/DW>
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=> d all l8

L8 ANSWER 1 OF 1 WPIX COPYRIGHT 2004 THE THOMSON CORP on STN
AN 2004-642131 [62] WPIX
DNC C2004-230782
TI New chiral chelating agents useful as catalyst in e.g. chiral alkylation, reduction, Michael addition or Baylis-Hillman reaction.
DC E19
IN CHEN, K; LEE, W; PAN, J; YANG, K

PA (CHEN-I) CHEN K; (LEEW-I) LEE W; (PANJ-I) PAN J; (YANG-I) YANG K
CYC 1
PI US 2004176243 A1 20040909 (200462) 11 C07F001-00 <--
ADT US 2004176243 A1 US 2003-612609 20030701
PRAI TW 2003-104138 A 20030227
IC ICM C07F001-00
ICS B01J031-00
AB US2004176243 A UPAB: 20040928
NOVELTY - Chiral chelating agents are new.
DETAILED DESCRIPTION - Chiral chelating agents of formulae (I) - (IX) are new.
R1, R2 and R = H or T;
T = methyl, ethyl, primary, secondary or tertiary straight, branched or cyclic 3-7C alkyl, heterocyclic group, aromatic group (optionally substituted at 2-,3- or 4-positions), an aromatic-like group, naphthyl or naphthyl-derived group;
n = 0 - 4;
R asterisk 1-R asterisk 4 = T (optionally substituted by at least a halo) or H;
X = O or N;and
R3 = CONR1R2, COOR or CH2SO2NR1R2.
An INDEPENDENT CLAIM is included for a chiral catalyst obtained from the chiral chelating agent of formulae (I) - (IX) and a metal.
USE - As catalysts in chiral (di)alkylation, reduction, cyclization including (2+2), (3+2), (4+2) or (2+2+2) cyclization, hydrogenation, epoxidation, cyclization of propane, aziridination, amination, an Aldol reaction, Michael addition reaction or Baylis-Hillman reaction (claimed).
ADVANTAGE - The chiral chelating agents improve the enantioselectivity and reduces the reaction time of the catalytic Baylis-Hillman reaction.
Dwg.0/0
FS CPI
FA AB; GI; DCN
MC CPI: E05-A; E05-B; E05-P; E06-H; E07-H; E10-A08C; E10-A19B; E10-A20B; E10-B01C; E10-B01E; E10-D03A; E10-D03D; E10-G02A2; N01-A; N01-B; N02; N03; N05-B; N05-C

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STRUCTURE FILE UPDATES: 9 DEC 2004 HIGHEST RN 796026-09-0
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to the file summary sheet on the web at:
http://www.cas.org/ONLINE/DBSS/registryss.html

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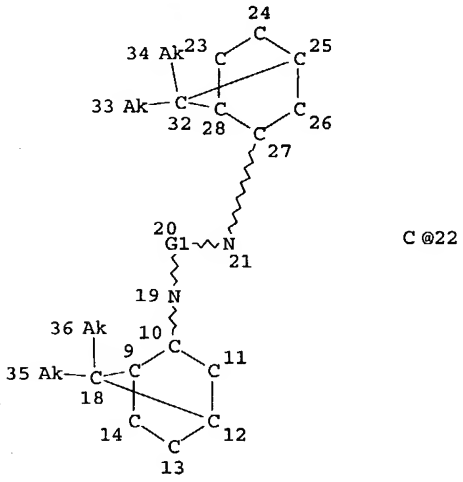

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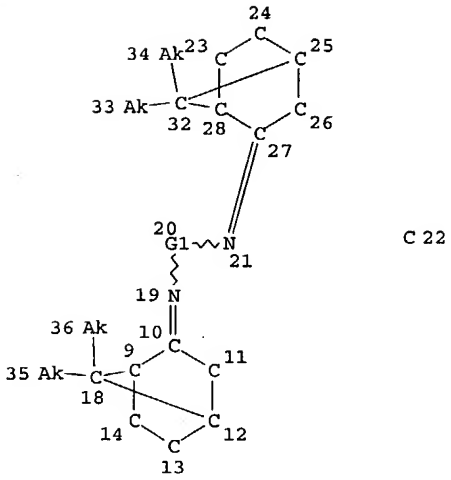

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46 ANSWERS

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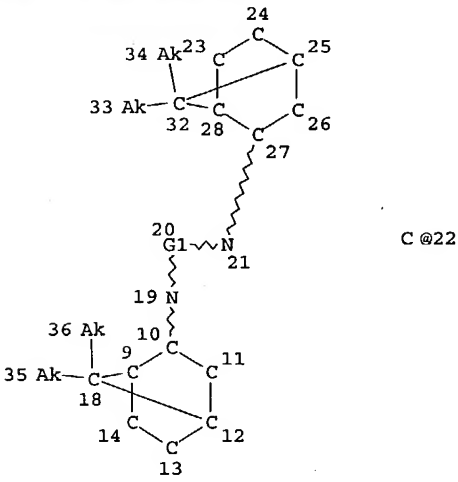

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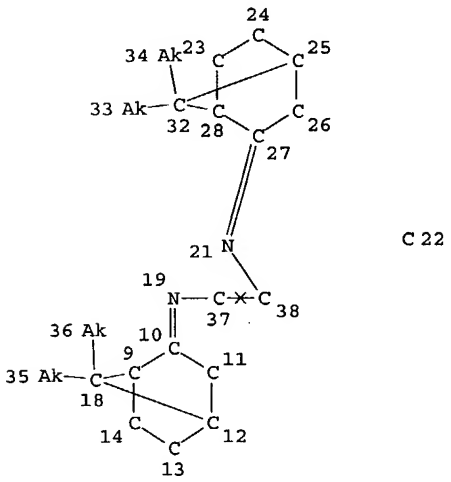

NODE ATTRIBUTES:
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NUMBER OF NODES IS 23

STEREO ATTRIBUTES: NONE
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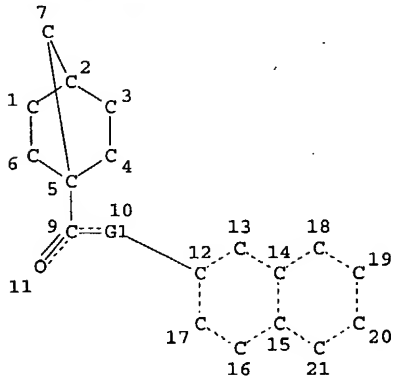

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STEREO ATTRIBUTES: NONE
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L2 1 TW2003-92104138/AP,PRN
L3 1 L1-2

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FILE 'REGISTRY' ENTERED AT 13:25:40 ON 10 DEC 2004
L5 41 SEA L4

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L7 1 TW2003-104138/AP,PRN
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E YANG K/AU
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L44           43 E3,E10
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L45          227 E3,E8
                E PAN JIA/AU
L46            7 E3,E6
L47          808 (TAIWAN (1A) NORMAL)/CS,PA
L48            3 L37-38 AND L39-47
L49           27 L37-38 NOT L48

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FILE LAST UPDATED: 9 Dec 2004  (20041209/ED)

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L48  ANSWER 1 OF 3  HCAPLUS  COPYRIGHT 2004 ACS on STN
AN   2004:739941  HCAPLUS
DN   141:243058
ED   Entered STN:  10 Sep 2004
TI   Preparation of chiral chelating agent and chiral catalysts for
     stereoselective addition reactions
IN   Chen, Kwunmin; Yang, Kung-shou; Lee, Wei-der;
     Pan, Jia-fu
PA   Taiwan
SO   U.S. Pat. Appl. Publ., 11 pp.
     CODEN: USXXCO
DT   Patent
LA   English
IC   ICM  C07F001-00
     ICS  B01J031-00
NCL  502162000; 556032000; 546002000; 548101000; 564147000
CC   23-17 (Aliphatic Compounds)
     Section cross-reference(s): 30, 78
FAN.CNT 1
     PATENT NO.          KIND   DATE        APPLICATION NO.        DATE
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PI   US 2004176243        A1    20040909    US 2003-612609         20030701
PRAI TW 2003-92104138     A     20030227
CLASS
 PATENT NO.      CLASS  PATENT FAMILY CLASSIFICATION CODES
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 US 2004176243   ICM    C07F001-00
                 ICS    B01J031-00
                 NCL    502162000; 556032000; 546002000; 548101000; 564147000
OS   MARPAT 141:243058
GI
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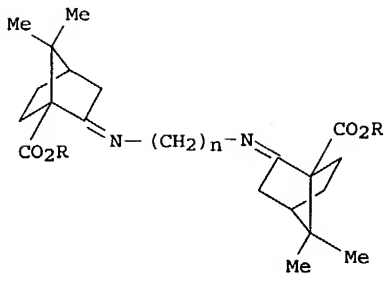

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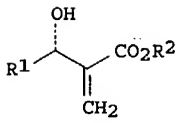


II

AB Chiral chelating agents and chiral catalysts, e.g. I (R = H, Me, Et, primary, secondary or tertiary straight, branched or cyclic C3-7 alkyl; heterocyclic, ,(un)substituted aromatic, aromatic-like, naphthyl, or naphthyl-derived group; n = 0-4) which are formed from the chiral chelating agents and metal, are described. Thus I (n = 2, R = H) was prepared by condensation of (+)-ketopinic acid with ethylenediamine in CHCl3. The complex of I (n = 2, R = H) with La(OTf)3 was screened as catalysts for the asym. Baylis-Hillman reaction of aldehydes R1CHO (R1 = Ph, Me, Et, Me2CH, 4-MeOC6H4, 4-O2NC6H4, cyclohexyl, PhCH2CH2CH2) and acrylate esters H2C:CHCO2R2 (R2 = Me, CMe3, Ph, CH2Ph, 1-naphthyl) to give (S)-alcs. II in 35-97% yields and 6-95% e.e.

ST stereoselective Baylis Hillman reaction chiral chelating agent catalyst; lanthanide camphor deriv catalyst prepn stereoselective addn reaction; aldehyde stereoselective addn acrylate chiral lanthanide catalyst; ketopinic acid condensation diamine

IT Addition reaction
Addition reaction catalysts
(Baylis-Hillman, stereoselective; preparation of chiral chelating agent and chiral catalysts for stereoselective addition reactions)

IT Cycloaddition reaction
Cycloaddition reaction catalysts
(aziridination, stereoselective; preparation of chiral chelating agent and chiral catalysts for stereoselective reactions)

IT Asymmetric synthesis and induction
(preparation of chiral chelating agent and chiral catalysts for stereoselective addition reactions)

IT Aldehydes, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of chiral chelating agent and chiral catalysts for stereoselective addition reactions)

IT Cyclopropanation
(preparation of chiral chelating agent and chiral catalysts for stereoselective reactions)

IT Cycloaddition reaction
Cycloaddition reaction catalysts
(stereoselective; preparation of chiral chelating agent and chiral catalysts for multiple types of stereoselective cycloaddn. reactions)

IT Addition reaction
Addition reaction catalysts
(stereoselective; preparation of chiral chelating agent and chiral catalysts for stereoselective addition reactions)

IT Aldol condensation
Aldol condensation catalysts
Amination
Amination catalysts
Aminohydroxylation
Aminohydroxylation catalysts
Cyclopropanation catalysts
Hydrogenation
Hydrogenation catalysts
Michael reaction
Michael reaction catalysts
Reduction
Reduction catalysts
(stereoselective; preparation of chiral chelating agent and chiral catalysts for stereoselective reactions)

IT 52093-25-1, Europium triflate 52093-26-2, Lanthanum triflate
54761-04-5, Ytterbium triflate
RL: CAT (Catalyst use); USES (Uses)
(preparation of chiral chelating agent and chiral catalysts for

stereoselective addition reactions)

IT 404582-34-9P **423770-46-1P**
RL: CAT (Catalyst use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(preparation of chiral chelating agent and chiral catalysts for stereoselective addition reactions)

IT 404582-36-1P **423770-45-0P**
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(preparation of chiral chelating agent and chiral catalysts for stereoselective addition reactions)

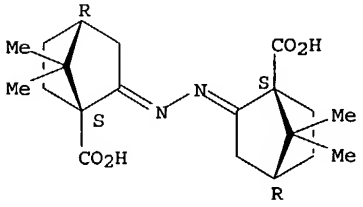
IT 75-07-0, Acetaldehyde, reactions 78-84-2, Isobutyraldehyde 96-33-3, Methyl acrylate 100-52-7, Benzaldehyde, reactions 107-15-3, Ethylenediamine, reactions 123-11-5, 4-Methoxybenzaldehyde, reactions 123-38-6, Propionaldehyde, reactions 555-16-8, 4-Nitrobenzaldehyde, reactions 937-41-7, Phenyl acrylate 1121-22-8, (.+-.)-trans-1,2-Diaminocyclohexane 1663-39-4, tert-Butyl acrylate 2043-61-0, Cyclohexanecarboxaldehyde 2495-35-4, Benzyl acrylate 18328-11-5, 4-Phenylbutanal 20069-66-3 40724-67-2, (+)-Ketopinic acid
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of chiral chelating agent and chiral catalysts for stereoselective addition reactions)

IT 108945-27-3P 112572-93-7P 140238-43-3P 189372-86-9P 221346-91-4P 293307-67-2P 500166-63-2P 500166-64-3P 500166-65-4P 500166-66-5P 500166-67-6P 500166-68-7P 500166-69-8P 500166-70-1P 500166-71-2P 500166-72-3P 500166-73-4P 753007-96-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of chiral chelating agent and chiral catalysts for stereoselective addition reactions)

IT **423770-46-1P**
RL: CAT (Catalyst use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(preparation of chiral chelating agent and chiral catalysts for stereoselective addition reactions)

RN 423770-46-1 HCAPLUS
CN Bicyclo[2.2.1]heptane-1-carboxylic acid, 2,2'-azinobis[7,7-dimethyl-, (1S,1'S,4R,4'R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry unknown.



L48 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:977476 HCAPLUS
DN 138:204497
ED Entered STN: 29 Dec 2002
TI Chiral Lewis Acid-Catalyzed Asymmetric Baylis-Hillman Reactions
AU [redacted]
CS Department of Chemistry, National **Taiwan Normal** University, Taipei, 116, Taiwan
SO Journal of Organic Chemistry (2003), 68(3), 915-919
CODEN: JOCEAH; ISSN: 0022-3263
PB American Chemical Society
DT Journal
LA English
CC 21-2 (General Organic Chemistry)
Section cross-reference(s): 75
OS CASREACT 138:204497
AB An effective chiral Lewis acid-catalyzed asym. Baylis-Hillman reaction is described. Good to high enantioselectivities were obtained using 3 mol % chiral catalyst. Novel camphor-derived dimerized ligands were prepared from the condensation of (+)-ketopinic acid with diamines and hydrazine under acidic conditions. When .alpha.-naphthyl acrylate was used as a Michael acceptor, the reaction is complete within 20 min with high

stereoselectivity and in reasonable chemical yields.
ST Baylis Hillman asym chiral Lewis acid catalyst
IT Addition reaction
(Baylis-Hillman, stereoselective; chiral Lewis acid-catalyzed asym. Baylis-Hillman reactions)
IT Asymmetric synthesis and induction
(chiral Lewis acid-catalyzed asym. Baylis-Hillman reactions)
IT Lewis acids
RL: CAT (Catalyst use); USES (Uses)
(chiral Lewis acid-catalyzed asym. Baylis-Hillman reactions)
IT Ligands
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(chiral; chiral Lewis acid-catalyzed asym. Baylis-Hillman reactions)
IT Addition reaction catalysts
(stereoselective, Baylis-Hillman; chiral Lewis acid-catalyzed asym. Baylis-Hillman reactions)
IT 52093-26-2, Lanthanum(III) triflate
RL: CAT (Catalyst use); USES (Uses)
(chiral Lewis acid-catalyzed asym. Baylis-Hillman reactions)
IT **500224-32-8P** 500224-33-9P
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(chiral Lewis acid-catalyzed asym. Baylis-Hillman reactions)
IT 75-07-0, Acetaldehyde, reactions 78-84-2, Isobutyraldehyde 96-33-3, Methyl acrylate 100-52-7, Benzaldehyde, reactions 104-53-0, 3-Phenylpropanal 107-15-3, Ethylenediamine, reactions 123-11-5, p-Anisaldehyde, reactions 123-38-6, Propionaldehyde, reactions 555-16-8, 4-Nitrobenzaldehyde, reactions 937-41-7, Phenyl acrylate 1121-22-8, trans-1,2-Cyclohexanediamine 1663-39-4, tert.-Butyl acrylate 2043-61-0, Cyclohexanecarboxaldehyde 2495-35-4, Benzyl acrylate 20069-66-3, 1-Naphthyl acrylate 40724-67-2, (+)-Ketopinic acid
RL: RCT (Reactant); RACT (Reactant or reagent)
(chiral Lewis acid-catalyzed asym. Baylis-Hillman reactions)
IT 500166-64-3P 500166-69-8P 500166-70-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(chiral Lewis acid-catalyzed asym. Baylis-Hillman reactions)
IT 108945-27-3P 112572-93-7P 140238-43-3P 140630-33-7P 189372-86-9P 221346-91-4P 293307-67-2P 500166-63-2P 500166-65-4P 500166-66-5P 500166-67-6P 500166-68-7P 500166-71-2P 500166-72-3P 500166-73-4P 500166-74-5P 500166-75-6P 500166-76-7P
RL: SPN (Synthetic preparation); PREP (Preparation)
(chiral Lewis acid-catalyzed asym. Baylis-Hillman reactions)
IT 500224-34-0P **500224-35-1P**
RL: CAT (Catalyst use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(crystal structure of)
RE.CNT 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Aggarwal, V; J Chem Soc, Chem Commun 1996, P2713 HCAPLUS
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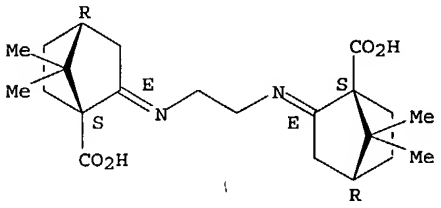
(27) Yang, K; Org Lett 2002, V4, P1107 HCAPLUS
IT **500224-32-8P**
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(chiral Lewis acid-catalyzed asym. Baylis-Hillman reactions)
RN 500224-32-8 HCAPLUS
CN Bicyclo[2.2.1]heptane-1-carboxylic acid, 2,2'-(1,2-ethanediyldinitrilo)bis[7,7-dimethyl-, (1S,1'S,2E,2'E,4R,4'R)- (9CI) (CA INDEX NAME)

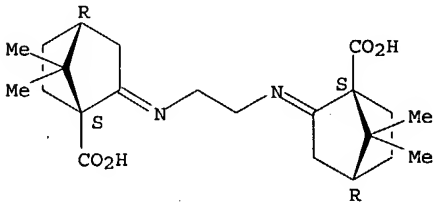
Absolute stereochemistry.
Double bond geometry as shown.



L48 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:173335 HCAPLUS
DN 136:369559
ED Entered STN: 11 Mar 2002
TI Enantioselective Aziridination of Alkenes with N-Aminophthalimide in the Presence of Lead Tetraacetate-Mediated Chiral Ligand
AU [redacted]
CS [redacted]
SO Organic Letters (2002), 4(7), 1107-1109
CODEN: ORLEF7; ISSN: 1523-7060
PB American Chemical Society
DT Journal
LA English
CC 27-3 (Heterocyclic Compounds (One Hetero Atom))
OS CASREACT 136:369559
AB Reaction of various N-alkenoyloxazolidinones with N-aminophthalimide and lead tetraacetate in the presence of camphor-derived chiral ligands provides the desired N-phthalimidoaziridines in good to high enantiomeric excess (67-95% ee) at 0 .degree.C within 15 min. The absolute stereochem. of the corresponding aziridine derivs. was established by chemical correlations.
ST aziridination stereoselective alkenoyloxazolidinone aminophthalimide chiral ligand
IT Cycloaddition reaction
Cycloaddition reaction catalysts
(aziridination, stereoselective; enantioselective aziridination of alkenes with N-aminophthalimide in the presence of lead tetraacetate and a chiral ligand)
IT Ligands
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(chiral; enantioselective aziridination of alkenes with N-aminophthalimide in the presence of lead tetraacetate and a chiral ligand)
IT Alkenes, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(enantioselective aziridination of alkenes with N-aminophthalimide in the presence of lead tetraacetate and a chiral ligand)
IT 87-69-4, (+)-Tartaric acid, uses 546-67-8, Lead tetraacetate
RL: CAT (Catalyst use); USES (Uses)
(enantioselective aziridination of alkenes with N-aminophthalimide in the presence of lead tetraacetate and a chiral ligand)
IT 404582-34-9P 404582-36-1P **423770-45-0P 423770-46-1P**
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(enantioselective aziridination of alkenes with N-aminophthalimide in the presence of lead tetraacetate and a chiral ligand)
IT 423770-47-2P
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(enantioselective aziridination of alkenes with N-aminophthalimide in

the presence of lead tetraacetate and a chiral ligand)
IT 423770-56-3P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(enantioselective aziridination of alkenes with N-aminophthalimide in the presence of lead tetraacetate and a chiral ligand)
IT 107-15-3, Ethylenediamine, reactions 464-78-8, Ketopinic acid 2043-21-2 20439-47-8, (1R,2R)-1,2-Cyclohexanediamine 21436-03-3, (1S,2S)-1,2-Cyclohexanediamine 31978-13-9 109299-92-5 109299-93-6 109299-94-7 227024-93-3 423770-49-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(enantioselective aziridination of alkenes with N-aminophthalimide in the presence of lead tetraacetate and a chiral ligand)
IT 423770-51-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(enantioselective aziridination of alkenes with N-aminophthalimide in the presence of lead tetraacetate and a chiral ligand)
IT 1875-48-5, N-Aminophthalimide
RL: RGT (Reagent); RACT (Reactant or reagent)
(enantioselective aziridination of alkenes with N-aminophthalimide in the presence of lead tetraacetate and a chiral ligand)
IT 151-56-4DP, Aziridine, derivs. 332923-24-7P 332923-28-1P 423770-48-3P 423770-50-7P 423770-52-9P 423770-53-0P 423770-54-1P 423770-55-2P
RL: SPN (Synthetic preparation); PREP (Preparation)
(enantioselective aziridination of alkenes with N-aminophthalimide in the presence of lead tetraacetate and a chiral ligand)
RE.CNT 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Yang, K; J Org Chem 2001, V66, P1676 HCAPLUS
IT **423770-45-0P**
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(enantioselective aziridination of alkenes with N-aminophthalimide in the presence of lead tetraacetate and a chiral ligand)
RN 423770-45-0 HCAPLUS
CN Bicyclo[2.2.1]heptane-1-carboxylic acid, 2,2'-(1,2-ethanediyldinitrilo)bis[7,7-dimethyl-, (1S,1'S,4R,4'R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry unknown.



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L49 ANSWER 1 OF 27 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:405897 HCAPLUS
DN 139:230450
ED Entered STN: 28 May 2003
TI Synthesis of C2-symmetrical diamine based on (1R)-(+)-camphor and application to oxidative aryl coupling of naphthols
AU Caselli, Alessandro; Giovenzana, Giovanni B.; Palmisano, Giovanni; Sisti, Massimo; Pilati, Tullio
CS Dipartimento di Chimica Organica e Industriale, Universita degli Studi di Milano, Milan, I-20133, Italy
SO Tetrahedron: Asymmetry (2003), 14(11), 1451-1454
CODEN: TASYE3; ISSN: 0957-4166
PB Elsevier Science B.V.
DT Journal
LA English
CC 25-24 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
OS CASREACT 139:230450
AB The new C2-sym. 1,2-diamine {N,N'-bis[(1R,2R,4R)-1,7,7-

trimethylbicyclo[2.2.1]hept-2-yl]-1,2-ethanediamine} (I) was synthesized from com. (1R)-(+)-camphor and scrutinized as ligand in the oxidative biaryl coupling of naphthol derivs. Under the optimal conditions employing a Cu-I triflate complex (10 mol%) in dichloroethane-MeCN and mol. sieves with air as the oxidant, aryl coupling of naphthol derivs. could be achieved in satisfactory yields (48-90% yield) and ees of up to 65%. The ester moiety at the 3-position of the substrate was found to be crucial for a satisfactory asym. induction in the present coupling reaction.

ST diamine camphor copper catalyst oxidative coupling naphthol

IT Phenols, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(naphthols; preparation of bis[trimethylbicycloheptyl]ethanediamine as ligand for oxidative biaryl coupling of naphthol derivs. with copper catalyst)

IT Crystal structure
(of bis[trimethylbicycloheptyl]ethanediamine as ligand for oxidative biaryl coupling of naphthol derivs. with copper catalyst)

IT Coupling reaction catalysts
(oxidative; preparation of bis[trimethylbicycloheptyl]ethanediamine as ligand for oxidative biaryl coupling of naphthol derivs. with copper catalyst)

IT 592544-50-8P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(crystal structure; preparation of bis[trimethylbicycloheptyl]ethanediamine as ligand for oxidative biaryl coupling of naphthol derivs. with copper catalyst)

IT 187989-61-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reduction of)

IT 592544-48-4P
RL: CAT (Catalyst use); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(preparation as ligand for oxidative biaryl coupling of naphthol derivs. with copper catalyst)

IT 180857-93-6
RL: CAT (Catalyst use); USES (Uses)
(preparation of bis[trimethylbicycloheptyl]ethanediamine as ligand for oxidative biaryl coupling of naphthol derivs. with copper catalyst)

IT 135-19-3, 2-Naphthol, reactions 883-99-8 17056-93-8 17324-04-8 98793-02-3 127363-96-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of bis[trimethylbicycloheptyl]ethanediamine as ligand for oxidative biaryl coupling of naphthol derivs. with copper catalyst)

IT 18531-91-4P 18531-94-7P 55515-98-5P 145415-62-9P 223903-32-0P 342630-36-8P 592544-49-5P 595561-28-7P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of bis[trimethylbicycloheptyl]ethanediamine as ligand for oxidative biaryl coupling of naphthol derivs. with copper catalyst)

IT 107-15-3, Ethylenediamine, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with camphor)

IT 464-49-3, (1R)-(+)-Camphor
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with ethylenediamine)

RE.CNT 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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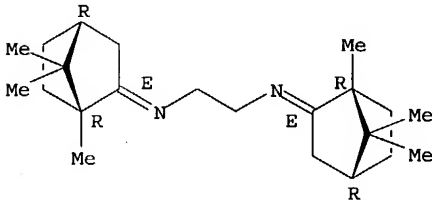
(20) Tomioka, K; Synthesis 1990, P541 HCAPLUS
(21) Whitesell, J; Chem Rev 1989, V89, P1581 HCAPLUS

IT **187989-61-3P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reduction of)

RN 187989-61-3 HCAPLUS
CN 1,2-Ethanediamine, N,N'-bis[(1R,4R)-1,7,7-trimethylbicyclo[2.2.1]hept-2-ylidene]-, (E,E)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



L49 ANSWER 2 OF 27 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:547138 HCAPLUS
DN 135:303448
ED Entered STN: 29 Jul 2001
TI Tetraethylammonium bromide catalyzed phase transfer reaction of potassium superoxide with hydrazones and tosylhydrazones
AU Kumar, Rajesh; Singh, Krishna Nand
CS Department of Applied Chemistry, Institute of Technology, Banaras Hindu University, Varanasi, 221005, India
SO Indian Journal of Chemistry, Section B: Organic Chemistry Including Medicinal Chemistry (2001), 40B(7), 579-583
CODEN: IJSBDB; ISSN: 0376-4699
PB National Institute of Science Communication
DT Journal
LA English
CC 21-2 (General Organic Chemistry)
OS CASREACT 135:303448
AB A variety of hydrazones and tosylhydrazones of carbonyl compds. have been investigated under the mild reaction conditions of potassium superoxide and tetraethylammonium bromide in dry DMF. As a result, hydrazones are generally transformed into azines whereas tosylhydrazones undergo facile fragmentation to give olefinic products in fairly good yields. The study highlights the use of tetraethylammonium bromide as an efficient and inexpensive catalyst for superoxide studies.
ST tetraethylammonium bromide catalyst superoxide reaction hydrazone tosylhydrazone; azine prepn tetraethylammonium bromide catalyst; olefin prepn tetraethylammonium bromide catalyst; phase transfer superoxide reaction hydrazone tosylhydrazone
IT Phase transfer catalysts
(oxidation; tetraethylammonium bromide catalyzed phase transfer reaction of potassium superoxide with hydrazones and tosylhydrazones)
IT Oxidation catalysts
(phase transfer; tetraethylammonium bromide catalyzed phase transfer reaction of potassium superoxide with hydrazones and tosylhydrazones)
IT Oxidation
(phase-transfer; tetraethylammonium bromide catalyzed phase transfer reaction of potassium superoxide with hydrazones and tosylhydrazones)
IT Hydrazones
RL: RCT (Reactant); RACT (Reactant or reagent)
(tetraethylammonium bromide catalyzed phase transfer reaction of potassium superoxide with hydrazones and tosylhydrazones)
IT Alkenes, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(tetraethylammonium bromide catalyzed phase transfer reaction of potassium superoxide with hydrazones and tosylhydrazones)
IT Azines
RL: SPN (Synthetic preparation); PREP (Preparation)
(tetraethylammonium bromide catalyzed phase transfer reaction of potassium superoxide with hydrazones and tosylhydrazones)

IT Cycloalkenes
RL: SPN (Synthetic preparation); PREP (Preparation)
(tetraethylammonium bromide catalyzed phase transfer reaction of potassium superoxide with hydrazones and tosylhydrazones)
IT 71-91-0, Tetraethylammonium bromide
RL: CAT (Catalyst use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(tetraethylammonium bromide catalyzed phase transfer reaction of potassium superoxide with hydrazones and tosylhydrazones)
IT 770-53-6, Camphor hydrazone 1666-17-7, Benzaldehyde tosylhydrazone 4545-18-0, Cyclohexanone tosylhydrazone 4545-20-4, Benzophenone tosylhydrazone 5344-88-7, Benzil monohydrazone 5350-57-2, Benzophenone hydrazone 5463-11-6, 4,4'-Dichlorobenzophenone hydrazone 12030-88-5, Potassium superoxide 13466-30-3, Acetophenone hydrazone 13629-22-6, Fluoren-9-one hydrazone 18708-16-2 19350-72-2, 4-Methoxybenzaldehyde tosylhydrazone 20114-55-0, 4,4'-Dimethoxybenzophenone hydrazone 52826-41-2 65111-92-4, 4,4'-Bis(dimethylamino)benzophenone hydrazone 68384-27-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(tetraethylammonium bromide catalyzed phase transfer reaction of potassium superoxide with hydrazones and tosylhydrazones)
IT 54260-53-6P, Tetraethylammonium superoxide
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(tetraethylammonium bromide catalyzed phase transfer reaction of potassium superoxide with hydrazones and tosylhydrazones)
IT 103-30-0P, trans-Stilbene 110-83-8P, Cyclohexene, preparation 451-40-1P, 2-Phenylacetophenone 591-49-1P, 1-Methylcyclohexene 632-51-9P, Tetraphenylethylene 729-43-1P, Acetophenone azine 983-79-9P, Benzophenone azine 1931-49-3P, 4,4'-Bis(dimethylamino)stilbene 2071-44-5P, Fluoren-9-one azine 4705-34-4P, 4,4'-Dimethoxystilbene 5831-42-5P, 4,4'-Dimethoxybenzophenone azine 47180-21-2P, Camphor azine 50482-89-8P 82907-50-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(tetraethylammonium bromide catalyzed phase transfer reaction of potassium superoxide with hydrazones and tosylhydrazones)
RE.CNT 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

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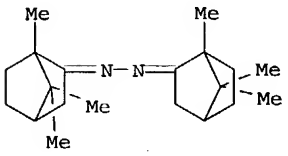
IT 47180-21-2P, Camphor azine
RL: SPN (Synthetic preparation); PREP (Preparation)
(tetraethylammonium bromide catalyzed phase transfer reaction of potassium superoxide with hydrazones and tosylhydrazones)
RN 47180-21-2 HCAPLUS
CN Bicyclo[2.2.1]heptan-2-one, 1,7,7-trimethyl-, (1,7,7-trimethylbicyclo[2.2.1]hept-2-ylidene)hydrazone (9CI) (CA INDEX NAME)



L49 ANSWER 3 OF 27 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:340740 HCAPLUS
DN 135:122006
ED Entered STN: 14 May 2001
TI A convenient synthesis of azines under solvent-free conditions using microwave irradiation
AU Loghmani-Khouzani, Hossein; Sadeghi, Majid M. M.; Safari, Javad; Abdorrezaie, Mohammad S.; Jafarpisheh, Masood
CS Department of Chemistry, Faculty of Sciences, University of Isfahan, Esfahan, 81744, Iran
SO Journal of Chemical Research, Synopses (2001), (2), 80-81
CODEN: JRPSDC; ISSN: 0308-2342
PB Science Reviews Ltd.
DT Journal
LA English
CC 21-2 (General Organic Chemistry)
OS CASREACT 135:122006
AB In an extremely fast method the reaction of hydrazine sulfate with a number of aldehydes and ketones is accelerated by microwave irradiation under solvent-free conditions in the presence of CH3CO2Na/CaCl2 to afford high yields of azines.
ST azine prepn microwave; hydrazine sulfate condensation aldehyde ketone microwave
IT Condensation reaction
Microwave
(azine preparation under solvent-free conditions using microwave irradiation)
IT Aldehydes, reactions
Ketones, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(azine preparation under solvent-free conditions using microwave irradiation)
IT Azines
RL: SPN (Synthetic preparation); PREP (Preparation)
(azine preparation under solvent-free conditions using microwave irradiation)
IT 76-22-2, Camphor 90-02-8, 2-Hydroxybenzaldehyde, reactions 98-86-2, Acetophenone, reactions 99-61-6, 3-Nitrobenzaldehyde 100-10-7, 4-(Dimethylamino)benzaldehyde 100-52-7, Benzaldehyde, reactions 104-55-2, Cinnamaldehyde 108-94-1, Cyclohexanone, reactions 119-53-9, Benzoin 119-61-9, Benzophenone, reactions 123-11-5, 4-Methoxybenzaldehyde, reactions 127-09-3, Sodium acetate 134-81-6, Benzil 1531-38-0, 2-Phenacylquinoline 10034-93-2, Hydrazine sulfate 10043-52-4, Calcium chloride, reactions 83319-24-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(azine preparation under solvent-free conditions using microwave irradiation)
IT 588-68-1P, Benzaldehyde azine 729-43-1P, Acetophenone azine 959-36-4P, Salicylaldehyde azine 983-79-9P, Benzophenone azine 1567-91-5P 1568-11-2P, Cinnamaldehyde azine 2143-98-8P 2299-73-2P, 4-Methoxybenzaldehyde azine 3893-33-2P, Benzil azine 4278-87-9P, Cyclohexanone azine **47180-21-2P**, Camphor azine 124951-88-8P 351183-99-8P 351184-00-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(azine preparation under solvent-free conditions using microwave irradiation)
RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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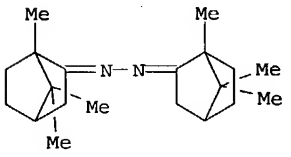
IT 47180-21-2P, Camphor azine
RL: SPN (Synthetic preparation); PREP (Preparation)
(azine preparation under solvent-free conditions using microwave irradiation)

RN 47180-21-2 HCAPLUS

CN Bicyclo[2.2.1]heptan-2-one, 1,7,7-trimethyl-, (1,7,7-trimethylbicyclo[2.2.1]hept-2-ylidene)hydrazone (9CI) (CA INDEX NAME)



L49 ANSWER 4 OF 27 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1998:393621 HCAPLUS

DN 129:144165

ED Entered STN: 27 Jun 1998

TI Complexes of the (1R)-(+)-camphor azine diphosphines Z,Z-3,3'-Ph2PnC10H15=N-N=C10H15PxPh2 and Z,Z-3,3'-Ph2PxC10H15=N-N=C10H15PxPh2 (x = exo, n = endo) with Group 6 metal carbonyls: crystal structures of the ligands and fac-[W(CO)3(E,Z-Ph2PxC10H15=N-N=C10H15PxPh2)]

AU Shaw, Bernard L.; Iranpoor, Nasser; Perera, Sarath D.; Thornton-Pett, Mark; Vessey, Jonathan D.

CS Sch. Chem., Univ. Leeds, Leeds, LS2 9JT, UK

SO Journal of the Chemical Society, Dalton Transactions: Inorganic Chemistry (1998), (11), 1885-1891
CODEN: JCDTBI; ISSN: 0300-9246

PB Royal Society of Chemistry

DT Journal

LA English

CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 29, 75

AB Treatment of (1R)-(+)-camphor azine with 2 mol equivalent of butyllithium, followed by chlorodiphenylphosphine, gave the azine diphosphines Z,Z-3,3'-Ph2PnC10H15:N-N:C10H15PxPh2 (I) and Z,Z-3,3'-Ph2PxC10H15:N-N:C10H15PxPh2 (II) (x = exo, n = endo); the structures of I and II.cntdot.3CHCl3 were determined by x-ray diffraction. On boiling an ethanol solution of the exo,exo-diphosphine II with sodium ethoxide or a propan-2-ol solution containing hydrazine hydrate and acetic acid the diphosphine isomerized to the corresponding exo,endo-diphosphine I. The corresponding diphosphine dioxides (III and IV) were prepared by treating I or II with H2O2, resp. Treatment of I with [Mo(CO)4(nbd)] (nbd = norbornadiene) or with [Mo(CO)3(cht)] (cht = cyclohepta-1,3,5-triene) gave fac-[Mo(CO)3(Ph2PnC10H15:N-N:C10H15PxPh2)] (1a). Treatment of I with [W(CO)4(nbd)] gave the tricarbonyltungsten(0) complex fac-[W(CO)3(Ph2PnC10H15:N-N:C10H15PxPh2)] (1b) and the analogous mer complex mer-[W(CO)3(Ph2PnC10H15:N-N:C10H15PxPh2)] (2). Treatment of II with [W(CO)6] gave the mer,exo,endo tricarbonyl complex 2, and the fac,endo,endo complex fac-[W(CO)3(Ph2PnC10H15:N-N:C10H15PnPh2)] (3). Treatment of II with [M(CO)4(nbd)] (M = Mo, W or Cr) gave mainly fac-[M(CO)3(Ph2PxC10H15:N-N:C10H15PxPh2)] (M = Mo 4a, W 4b or Cr 4c). The crystal structure of the tricarbonyltungsten(0) complex 4b.cntdot.EtOH was determined by x-ray diffraction and the chirality around tungsten shown to be C, i.e. clockwise. Treatment of 4b with 1 mol equivalent of bromine gave the tricarbonyltungsten(II) bromide salt [WBr(CO)3(Ph2PxC10H15:N-N:C10H15PxPh2)]Br (5). IR, proton, phosphorus-31 and some carbon-13 NMR data are given.

ST camphor azine diphosphine prepn isomerization complexation; transition metal camphor azine diphosphine prepn; tungsten camphor azine diphosphine prepn structure; molybdenum camphor azine diphosphine complex prepn; chromium camphor azine diphosphine complex prepn; crystal structure tungsten camphor azine diphosphine

IT Isomerization
(endo-exo; of camphor azine diphosphine)
IT Crystal structure
Molecular structure
(of camphor azine diphosphine and its tungsten complex)
IT Transition metal complexes
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of transition metal camphor azine diphosphine complexes)
IT 1079-66-9, Chlorodiphenylphosphine 173396-18-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(for preparation of camphor azine diphosphine isomers and their oxides and transition metal complexes)
IT 12125-77-8, Tricarbonyl(cyclohepta-1,3,5-triene)molybdenum 12129-25-8, Tetracarbonyl(norbornadiene)tungsten 12146-36-0, Tetracarbonyl(norbornadiene)chromium 12146-37-1, Tetracarbonyl(norbornadiene)molybdenum 14040-11-0, Tungsten hexacarbonyl
RL: RCT (Reactant); RACT (Reactant or reagent)
(for preparation of transition metal camphor azine diphosphine complex)
IT **210530-92-0P** 210647-79-3P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and crystal structure)
IT 210588-63-9P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and mol. structure)
IT **210530-80-6P 210530-81-7P** 210530-82-8P 210530-83-9P 210530-87-3P 210530-90-8P 210588-60-6P 210588-61-7P 210588-62-8P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
IT **210530-78-2P**
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation, crystal structure, oxidation to phosphine oxide and complexation with molybdenum and tungsten)
IT **210530-79-3P**
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation, mol. structure, endo-exo isomerization, oxidation to phosphine oxide and complexation with transition metals)
RE.CNT 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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(27) Sheldrick, G; SHELXL 93 1993
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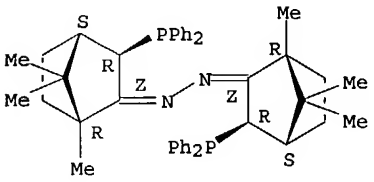
IT **210530-92-0P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and crystal structure)
RN 210530-92-0 HCAPLUS
CN Bicyclo[2.2.1]heptan-2-one, 3-(diphenylphosphino)-1,7,7-trimethyl-, (2Z)-[(1R,3R,4S)-3-(diphenylphosphino)-1,7,7-trimethylbicyclo[2.2.1]hept-2-ylidene]hydrazone, (1R,2Z,3R,4S)-, compd. with trichloromethane (1:3)

(9CI) (CA INDEX NAME)

CM 1

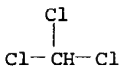
CRN 210530-79-3
CMF C44 H50 N2 P2

Absolute stereochemistry.
Double bond geometry as shown.



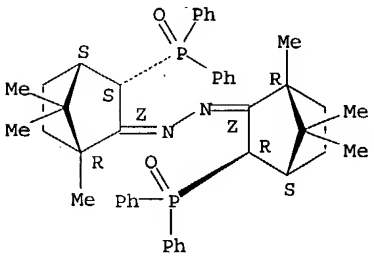
CM 2

CRN 67-66-3
CMF C H Cl3



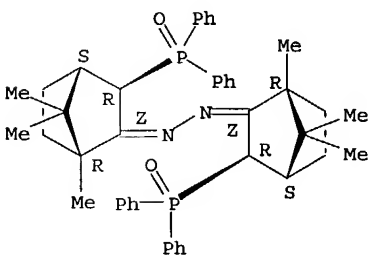
IT **210530-80-6P 210530-81-7P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 210530-80-6 HCAPLUS
CN Bicyclo[2.2.1]heptan-2-one, 3-(diphenylphosphinyl)-1,7,7-trimethyl-, (2Z)-[(1R,3R,4S)-3-(diphenylphosphinyl)-1,7,7-trimethylbicyclo[2.2.1]hept-2-ylidene]hydrazone, (1R,2Z,3S,4S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



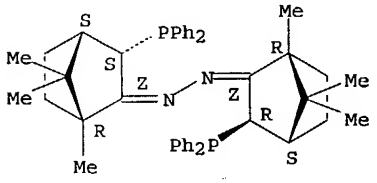
RN 210530-81-7 HCAPLUS
CN Bicyclo[2.2.1]heptan-2-one, 3-(diphenylphosphinyl)-1,7,7-trimethyl-, (2Z)-[(1R,3R,4S)-3-(diphenylphosphinyl)-1,7,7-trimethylbicyclo[2.2.1]hept-2-ylidene]hydrazone, (1R,2Z,3R,4S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



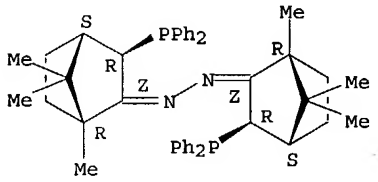
IT 210530-78-2P
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation, crystal structure, oxidation to phosphine oxide and complexation with molybdenum and tungsten)
RN 210530-78-2 HCAPLUS
CN Bicyclo[2.2.1]heptan-2-one, 3-(diphenylphosphino)-1,7,7-trimethyl-, (2Z)-[(1R,3R,4S)-3-(diphenylphosphino)-1,7,7-trimethylbicyclo[2.2.1]hept-2-ylidene]hydrazone, (1R,2Z,3S,4S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



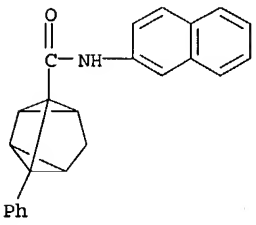
IT 210530-79-3P
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation, mol. structure, endo-exo isomerization, oxidation to phosphine oxide and complexation with transition metals)
RN 210530-79-3 HCAPLUS
CN Bicyclo[2.2.1]heptan-2-one, 3-(diphenylphosphino)-1,7,7-trimethyl-, (2Z)-[(1R,3R,4S)-3-(diphenylphosphino)-1,7,7-trimethylbicyclo[2.2.1]hept-2-ylidene]hydrazone, (1R,2Z,3R,4S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.

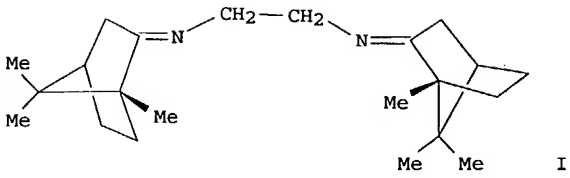


L49 ANSWER 5 OF 27 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1997:462096 HCAPLUS
DN 127:212365
ED Entered STN: 24 Jul 1997
TI Photoinitiated rearrangements of 3-phenylnorbornadiene with conjugated substituents in 2-position
AU Chernoivanov, Vladimir A.; Dubonosov, Alexander D.; Bren, Vladimir A.; Minkin, Vladimir I.; Suslov, Alexander N.; Borodkin, Gennadii S.
CS Institute Physical Organic Chemistry, Rostov State University, Rostov on Don, 344090, Russia
SO Molecular Crystals and Liquid Crystals Science and Technology, Section A: Molecular Crystals and Liquid Crystals (1997), 297, 239-245
CODEN: MCLCE9; ISSN: 1058-725X
PB Gordon & Breach
DT Journal
LA English
CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 22, 52
AB A series of novel 3-phenylnorbornadienes with conjugated substituents in 2-position (carbaldimine, carbaldoxime, amide, aroylvinyl and heterocyclic groups) have been synthesized. All the compds. obtained absorb in the 310-420 nm spectral region and under UV-Vis-irradiation form corresponding quadricyclanes with quantum yields in the range of 0.1-0.7. The back reaction proceeds almost quant. yield under homogeneous and heterogeneous catalysis or on heating.
ST photorearrangement phenylnorbornadiene photolysis photoisomerization photochromism spectra

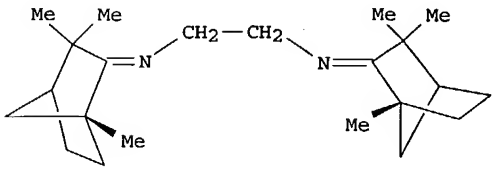
IT Photochromism
Photolysis
UV and visible spectra
(photoinitiated rearrangements of 3-phenylnorbornadiene with conjugated substituents in 2-position)
IT Isomerization
(photoisomerization; photoinitiated rearrangements of 3-phenylnorbornadiene with conjugated substituents in 2-position)
IT 147678-07-7 158197-96-7 158197-97-8 158197-98-9 158197-99-0
158198-00-6 158198-01-7 158198-02-8 **158198-03-9**
158815-83-9 158815-84-0 158815-85-1 158815-86-2 160346-44-1
160346-50-9 176100-81-5 194658-32-7 194658-33-8 194658-34-9
194658-35-0 194658-36-1 194658-37-2 194658-38-3 194658-39-4
194658-40-7 194658-41-8
RL: FMU (Formation, unclassified); PRP (Properties); FORM (Formation, nonpreparative)
(photoinitiated rearrangements of 3-phenylnorbornadiene with conjugated substituents in 2-position)
IT 123316-35-8 123316-36-9 147678-04-4 158197-86-5 158197-87-6
158197-88-7 158197-89-8 158197-90-1 158197-91-2 158197-92-3
158197-93-4 158197-94-5 158815-79-3 158815-80-6 158815-81-7
158815-82-8 160346-42-9 176100-80-4 194658-16-7 194658-17-8
194658-20-3 194658-21-4 194658-22-5 194658-23-6 194658-24-7
194658-25-8 194658-26-9 194658-28-1 194658-29-2 194658-30-5
194658-31-6
RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)
(photoinitiated rearrangements of 3-phenylnorbornadiene with conjugated substituents in 2-position)
IT **158198-03-9**
RL: FMU (Formation, unclassified); PRP (Properties); FORM (Formation, nonpreparative)
(photoinitiated rearrangements of 3-phenylnorbornadiene with conjugated substituents in 2-position)
RN 158198-03-9 HCAPLUS
CN Tetracyclo[3.2.0.02,7.04,6]heptane-1-carboxamide, N-2-naphthalenyl-5-phenyl- (9CI) (CA INDEX NAME)



L49 ANSWER 6 OF 27 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1997:106714 HCAPLUS
DN 126:212258
ED Entered STN: 14 Feb 1997
TI Structural properties of some C2-symmetric Schiff bases and stereoselectivity in cyclopropanation of styrene by their Cu(I) complexes
AU Raza, Zlata; Dakovic, Senka; Vinkovic, Vladimir; Sunjic, Vitomir
CS Ruder Boskovic Institute, Zagreb, 10000, Croatia
SO Croatica Chemica Acta (1996), 69(4), 1545-1559
CODEN: CCACAA; ISSN: 0011-1643
PB Croatian Chemical Society
DT Journal
LA English
CC 30-10 (Terpenes and Terpenoids)
Section cross-reference(s): 22
OS CASREACT 126:212258
GI



I



II

AB C2-sym. Schiff bases derived from R-camphor and R-fenchone were prepared, their configurational and conformational features determined by 1D- and 2D-NMR spectra and supported by MM2 calcns. Their Cu(I) complexes prepared in situ were examined in cyclopropanation of styrene and low to medium e.e.'s (2-32%) were obtained. Correlation of the structure of E,E-I and Z,Z-II with enantioselectivity of their Cu(I) complexes revealed restricting steric requirements in the former, possessing gem di-Me group in the proximity of the chiral center, near to the coordination sphere of alkene and carbene, as the probable origin of its higher enantioselectivity.

ST Schiff base camphor fenchone prepn; conformation Schiff base camphor fenchone; cyclopropanation catalyst camphor fenchone Schiff base; copper camphor fenchone Schiff base

IT Cyclopropanation
(stereoselective; structural properties of C2-sym. Schiff bases and stereoselectivity in cyclopropanation of styrene by Cu(I) complexes)

IT Asymmetric synthesis and induction
Conformation
Cyclopropanation catalysts
Molecular mechanics
(structural properties of C2-sym. Schiff bases and stereoselectivity in cyclopropanation of styrene by Cu(I) complexes)

IT 42152-44-3, Cuprous trifluoromethanesulfonate
RL: CAT (Catalyst use); USES (Uses)
(structural properties of C2-sym. Schiff bases and stereoselectivity in cyclopropanation of styrene by Cu(I) complexes)

IT **187989-61-3P 187989-62-4P 187989-63-5P**
187989-64-6P 187989-65-7P 187989-66-8P
RL: CAT (Catalyst use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(structural properties of C2-sym. Schiff bases and stereoselectivity in cyclopropanation of styrene by Cu(I) complexes)

IT 95-54-5, o-Phenylenediamine, reactions 100-42-5, Styrene, reactions 107-15-3, 1,2-Ethanediamine, reactions 108-45-2, m-Phenylenediamine, reactions 109-76-2, 1,3-Propanediamine 110-60-1, 1,4-Butanediamine 464-49-3, R-Camphor 623-73-4, Ethyl diazoacetate 7787-20-4, (-)-Fenchone 63254-50-2 65437-23-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(structural properties of C2-sym. Schiff bases and stereoselectivity in cyclopropanation of styrene by Cu(I) complexes)

IT 34702-96-0P 34702-97-1P 34716-60-4P 67489-30-9P 67528-67-0P 105367-38-2P 120143-38-6P 120143-39-7P
RL: SPN (Synthetic preparation); PREP (Preparation)
(structural properties of C2-sym. Schiff bases and stereoselectivity in cyclopropanation of styrene by Cu(I) complexes)

RE.CNT 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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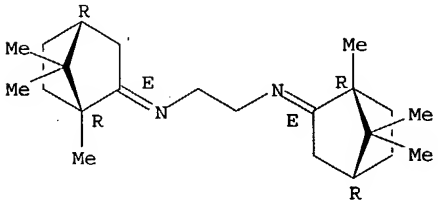
IT **187989-61-3P 187989-62-4P 187989-63-5P**
RL: CAT (Catalyst use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(structural properties of C2-sym. Schiff bases and stereoselectivity in cyclopropanation of styrene by Cu(I) complexes)

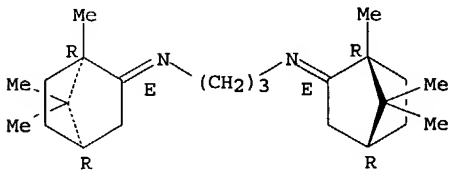
RN 187989-61-3 HCAPLUS
CN 1,2-Ethanediamine, N,N'-bis[(1R,4R)-1,7,7-trimethylbicyclo[2.2.1]hept-2-ylidene]-, (E,E)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



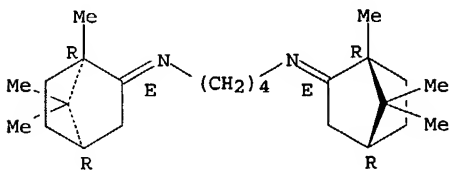
RN 187989-62-4 HCAPLUS
CN 1,3-Propanediamine, N,N'-bis(1,7,7-trimethylbicyclo[2.2.1]hept-2-ylidene)-, [1R-[1.alpha.,2E[E(1R*,4R*)],4.alpha.]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



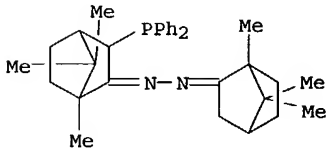
RN 187989-63-5 HCAPLUS
CN 1,4-Butanediamine, N,N'-bis(1,7,7-trimethylbicyclo[2.2.1]hept-2-ylidene)-, [1R-[1.alpha.,2E[E(1R*,4R*)],4.alpha.]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



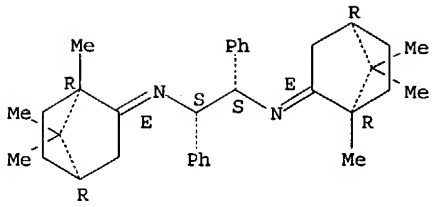
L49 ANSWER 7 OF 27 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1995:984317 HCAPLUS
DN 124:163141
ED Entered STN: 14 Dec 1995
TI A general method of generating agostic interaction between RuII and C-H bonds of tert-butyl, methyl, aryl, heterocyclic or alkenyl groups using azine phosphines
AU Perera, Sarath D.; Shaw, Bernard L.
CS School of Chemistry, University of Leeds, Leeds, LS2 9JT, UK
SO Journal of the Chemical Society, Dalton Transactions: Inorganic Chemistry (1995), (23), 3861-66
CODEN: JCDTBI; ISSN: 0300-9246
PB Royal Society of Chemistry
DT Journal
LA English
CC 78-7 (Inorganic Chemicals and Reactions)
AB Treatment of [RuCl2(PPh3)3] (2) with the azine phosphine Z,E-PPh2CH2C(But)=N-N=C(Me)But 3a, derived from MeC(=O)But, gave the .delta.-agostic tert-Bu complex mer,trans-[RuCl2(PPh3){PPh2CH2-C(But)=N-N=C(Me)But}] (4a), in which all nine hydrogens of the tert-Bu group are agostically interacting with Ru on the NMR time-scale at 20.degree.. The analogous .delta.-agostic tert-Bu complex mer,trans-[RuCl2(PPh3){PPh2CH2C(But)=N-N=C(H)But}] (4b) was also prepared Treatment of 2 with the sym. azine diphosphine Z,Z-PPh2CH2C(But)=N-N=C(But)CH2PPh2 (5) gave the .delta.-agostic tert-Bu complex mer,trans-[RuCl2(PPh3){PPh2CH2C(But)=N-N=C(But)CH2PPh2}] (6), in which one of the PPh2 groups is uncoordinated. Treatment of 2 with the azine phosphine Z,E-PPh2CH2C(But)=N-N=C10H16 (7), derived from pinacolone-fenchone mixed azine, gave the .delta.-agostic Me complex mer,trans-[RuCl2(PPh3){PPh2CH2C(But)=N-N=C10H16}] (8), in which the Me group (C10H3) in the 1-position of the fenchone residue interacts with Ru (fenchone = 1,3,3-trimethylbicyclo[2.2.1]heptan-2-one). The unsym. camphor azine monophosphine Z,Z-PPh2-C10H15=N-N=C10H16 (9) also gave a similar .delta.-agostic Me complex mer,trans-[RuCl2(PPh3){PPh2-C10H15=N-N=C10H16}] (10) (camphor = 1,7,7-trimethylbicyclo[2.2.1]heptan-2-one). Treatment of 2 with the azine Z,E-PPh2CH2C(But)=N-N=CH(C6H4NMe2-4) 11a, derived from 4-dimethylaminobenzaldehyde, gave the .delta.-agostic complex mer,trans-[RuCl2(PPh3){PPh2CH2C(But)=N-N=CH(C6H4NMe2-4)}] (12a), in which the hydrogens in the 2- and 6-positions of the aryl group are agostically interacting with Ru. Similarly, the azines 11b and 11c, derived from 4-methoxybenzaldehyde or 4-nitrobenzaldehyde, gave the .delta.-agostic complexes 12b and 12c, resp. Treatment of 2 with the azine 13, derived from 1-methylpyrrole-2-carbaldehyde, gave the .delta.-agostic complex 14, in which the H in the 3-position of the heterocyclic group is agostically interacting with Ru. Treatment of 2 with the azine 15, derived from benzylideneacetone, gave the .delta.-agostic alkenyl complex 16. Proton, 31P-{1H} and some 13C-{1H} NMR data are given.
ST ruthenium azine phosphine prepn agostic bond
IT Azines
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(ruthernium chloro phosphine azine complexes; preparation and agostic bonds in)
IT Bond
(agostic, in ruthenium azine phosphine complexes)
IT 108-18-9, Diisopropylamine 1079-66-9, Chlorodiphenylphosphine 173396-18-4, (1R)-(+)-Camphor azine
RL: RCT (Reactant); RACT (Reactant or reagent)
(for preparation of azine phosphine and its ruthenium complex with agostic bond)
IT 158273-99-5P 158274-00-1P 158274-01-2P 158274-02-3P 158308-33-9P 173283-22-2P 173283-23-3P 173283-24-4P 173283-25-5P 173283-26-6P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and agostic bonding in)
IT 156783-25-4P 156783-26-5P 156783-27-6P 173283-21-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction with ruthenium chloro triphenylphosphine complex)
IT 143627-09-2 155606-61-4 156783-24-3 157064-00-1 157064-01-2 157064-07-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with ruthenium chloro triphenylphosphine complex)
IT 15529-49-4, Dichlorotris(triphenylphosphine)ruthenium
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactions with azine phosphines for preparation of azine chloro complexes with agostic bonds)
IT 156783-25-4P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction with ruthenium chloro triphenylphosphine complex)
RN 156783-25-4 HCAPLUS
CN Bicyclo[2.2.1]heptan-2-one, 3-(diphenylphosphino)-1,7,7-trimethyl-, (1,7,7-trimethylbicyclo[2.2.1]hept-2-ylidene)hydrazone, [1S-[1.alpha.,2(1R*,4R*),3.beta.,4.alpha.]]- (9CI) (CA INDEX NAME)



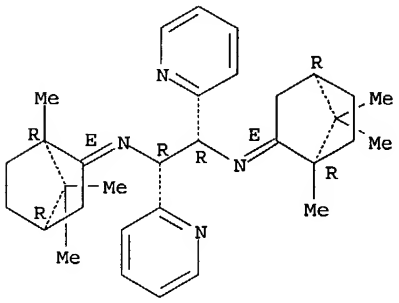
L49 ANSWER 8 OF 27 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1995:437526 HCAPLUS
DN 122:314842
ED Entered STN: 23 Mar 1995
TI Studies on the asymmetric oxidative coupling reaction of (+)-camphor imine carbanions
AU Liu, Gui-Lan; Hu, Wen-Hao; Ma, Yu-Zhi; Jiang, Yao-Zhong
CS Chengdu Inst. Org. Chem., Chinese Academy Sci., Chengdu, 610041, Peop. Rep. China
SO Huaxue Xuebao (1995), 53(2), 183-7
CODEN: HHHPA4; ISSN: 0567-7351
PB Kexue
DT Journal
LA Chinese
CC 30-10 (Terpenes and Terpenoids)
Section cross-reference(s): 22
AB The paper studies on asym. coupling reaction of (+)-camphor imine carbanions. The ratio of threo to erythro is determined by HPLC of the coupling products and d.e. values of threo isomers are measured to 20 .apprx. 95% by 1H NMR. A series of factors such as oxidative coupling agents, solvents, bases, which affect coupling reaction have been investigated.
ST asym oxidative coupling camphor imine carbanion
IT Coupling reaction
Oxidation
(stereoselective, asym. oxidative coupling reaction of (+)-camphor imine carbanions)
IT 63765-03-7 163252-20-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(asym. oxidative coupling reaction of (+)-camphor imine carbanions)
IT **137359-92-3P 163252-19-5P 163252-21-9P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(asym. oxidative coupling reaction of (+)-camphor imine carbanions)
IT 29841-69-8P **137767-94-3P** 159928-74-2P
RL: SPN (Synthetic preparation); PREP (Preparation)
(asym. oxidative coupling reaction of (+)-camphor imine carbanions)
IT **137359-92-3P 163252-19-5P 163252-21-9P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(asym. oxidative coupling reaction of (+)-camphor imine carbanions)
RN 137359-92-3 HCAPLUS
CN 1,2-Ethanediamine, 1,2-diphenyl-N,N'-bis(1,7,7-trimethylbicyclo[2.2.1]hept-2-ylidene)-, [1R-[1.alpha.,2E[1S*,2S*(1R*,2E,4R*)],4.alpha.]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



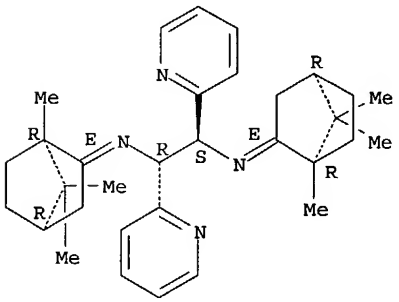
RN 163252-19-5 HCAPLUS
CN 1,2-Ethanediamine, 1,2-di-2-pyridinyl-N,N'-bis(1,7,7-trimethylbicyclo[2.2.1]hept-2-ylidene)-, [1R-[1.alpha.,2E[1R*,2R*(1R*,2E,4R*)],4.alpha.]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).
Double bond geometry as shown.



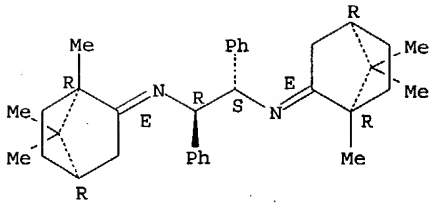
RN 163252-21-9 HCAPLUS
CN 1,2-Ethanediamine, 1,2-di-2-pyridinyl-N,N'-bis(1,7,7-trimethylbicyclo[2.2.1]hept-2-ylidene)-, [1R-[1.alpha.,2E[1R*,2S*(1R*,2E,4R*)],4.alpha.]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.

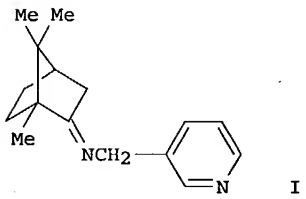


IT **137767-94-3P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(asym. oxidative coupling reaction of (+)-camphor imine carbanions)
RN 137767-94-3 HCAPLUS
CN 1,2-Ethanediamine, 1,2-diphenyl-N,N'-bis(1,7,7-trimethylbicyclo[2.2.1]hept-2-ylidene)-, [1R-[1.alpha.,2E[1R*,2S*(1R*,2E,4R*)],4.alpha.]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



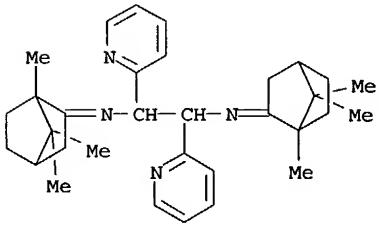
L49 ANSWER 9 OF 27 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1995:182122 HCAPLUS
DN 122:55868
ED Entered STN: 11 Nov 1994
TI Asymmetric synthesis. XX: Asymmetric oxidative coupling reaction of imine carbanions via (+)-camphor chiral template
AU Liu, Guilan; Hu, Wenhao; Ma, Yuzi; Jiang, Yaozhong; Yang, Teng-Kuei
CS Chengdu Inst. Org. Chem., Acad. Sin., Chengdu, 610015, Peop. Rep. China
SO Synthetic Communications (1994), 24(21), 3115-22
CODEN: SYNCAV; ISSN: 0039-7911
PB Dekker
DT Journal
LA English
CC 27-16 (Heterocyclic Compounds (One Hetero Atom))
OS CASREACT 122:55868
GI



I

AB The asym. coupling reaction of (+)-camphor imine I using a variety of oxidative coupling agents is described. The threo products are isolated with 80-95% d.e. When FeCl3 or 1,2-dibromoethane is used as oxidative coupling agents, a 93:7 threo:erythro ratio with a d.e. for the threo compound of 95% is obtained.
ST camphor imine asym oxidative coupling
IT Asymmetric synthesis and induction
(asym. oxidative coupling reaction of imine carbanions in presence of FeCl3 or 1,2-dibromoethane)
IT Imines
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(asym. oxidative coupling reaction of imine carbanions via (+)-camphor chiral template)
IT Bond formation
(carbon-carbon, by asym. oxidative coupling reaction of imine carbanions via (+)-camphor chiral template)
IT Coupling reaction catalysts
(oxidative, asym. oxidative coupling reaction of imine carbanions in presence of FeCl3 or 1,2-dibromoethane)
IT Coupling reaction
(oxidative, asym. oxidative coupling reaction of imine carbanions via (+)-camphor chiral template)
IT 106-93-4, 1,2-Dibromoethane 7553-56-2, Iodine, uses 7705-08-0, Iron trichloride, uses 7726-95-6, Bromine, uses 15158-11-9, Copper 2+, uses
RL: CAT (Catalyst use); USES (Uses)
(asym. oxidative coupling reaction of imine carbanions via (+)-camphor chiral template)
IT 464-49-3, (+)-Camphor 3731-51-9, 2-Aminomethylpyridine
RL: RCT (Reactant); RACT (Reactant or reagent)
(asym. oxidative coupling reaction of imine carbanions via (+)-camphor chiral template)
IT 159928-72-0P **159928-73-1P**

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(asym. oxidative coupling reaction of imine carbanions via (+)-camphor chiral template)
IT 20717-86-6
RL: CAT (Catalyst use); USES (Uses)
(failed reaction; asym. oxidative coupling reaction of imine carbanions via (+)-camphor chiral template)
IT 159928-74-2P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
IT 159928-73-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(asym. oxidative coupling reaction of imine carbanions via (+)-camphor chiral template)
RN 159928-73-1 HCAPLUS
CN 1,2-Ethanediamine, 1,2-di-2-pyridinyl-N,N'-bis(1,7,7-trimethylbicyclo[2.2.1]hept-2-ylidene)- (9CI) (CA INDEX NAME)



L49 ANSWER 10 OF 27 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1995:55138 HCAPLUS
DN 123:33610
ED Entered STN: 08 Nov 1994
TI Stereospecific Synthesis of Phosphonate Analogs of Diaminopimelic Acid (DAP), Their Interaction with DAP Enzymes, and Antibacterial Activity of Peptide Derivatives
AU Song, Yonghong; Niederer, Daniel; Lane-Bell, Patricia M.; Lam, Lister K. P.; Crawley, Suzanne; Palcic, Monica M.; Pickard, Michael A.; Pruess, David L.; Vederas, John C.
CS Department of Chemistry, University of Alberta, Edmonton, AB, T6G 2G2, Can.
SO Journal of Organic Chemistry (1994), 59(19), 5784-93
CODEN: JOCEAH; ISSN: 0022-3263
DT Journal
LA English
CC 34-3 (Amino Acids, Peptides, and Proteins)
Section cross-reference(s): 7, 10, 29
OS CASREACT 123:33610
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB Analogs of diaminopimelic acid (DAP) in which the carboxyl groups are replaced with phosphonic acid moieties were synthesized as pure stereoisomers, examined as inhibitors of three DAP enzymes, and tested as antibacterial agents. Condensation of the enolate of imidazolidinone I with 1,3-dibromopropane stereoselectively gave the expected monobromide II, which was used to alkylate (-)-camphor imine III to yield a 4:1 mixture of diastereomers 1R-IV and 1S-IV, resp. Separation and hydrolytic deprotection gave stereochem. pure (1,5-diamino-5-carboxypentyl)phosphonic acids (1R,5S)-V and (1S,5S)-V. An analogous approach employing (+)-camphor imine VI and monobromide II also allowed synthesis of (1R,5S)-V and (1S,5S)-V, but in a reversed ratio (ca. 2:3). The pure (1R,5R)-V and (1S,5R)-V could be made by a similar procedure using the R-enantiomer of I, 1,3-dibromopropane, and III. A DAP bis-phosphonate analog VII, in which both carboxyl groups are replaced, was synthesized as a mixture of all possible isomers by condensation of 2 equiv of the enolate of imine III or VI with 1,3-dibromopropane followed by hydrolysis. A series of di- and

tripeptides of individual P-DAP isomers with L-alanine were synthesized to enhance transport into bacterial cells for antimicrobial tests. Condensation of L-alanine N-carboxyanhydride with individual P-DAP isomers (1R,5S)-, (1S,5S)-, (1R,5R)- and (1S,5R)-V in aqueous Na2CO3/DMF gave acylation only on the amino group adjacent to the carboxyl to generate the appropriate dipeptides. Acylation of P-DAP isomers (1R,5S)- and (1S,5S)-V with Boc-L-Ala-L-Ala proceeded similarly to give, after deprotection, the corresponding tripeptides. The P-DAP isomers were generally weak competitive inhibitors of purified DAP decarboxylase from wheat germ (Triticum vulgaris), DAP dehydrogenase from Bacillus sphaericus, and DAP epimerase from Escherichia coli. P-DAP (1S,5S)-V has the strongest effect on the decarboxylase and epimerase, and its enantiomer (1R,5R)-V is the strongest inhibitor of the dehydrogenase. Antibacterial tests show that the P-DAP isomers display negligible activity except against Salmonella typhimurium LT-2. (1S,5S)-V is the most active isomer and its inhibition is reversed by DAP.

ST stereospecific synthesis diaminopimelic acid phosphonate analog; aminopimelic acid phosphonate analog stereospecific synthesis; pimelic acid diamino phosphonate analog; enzyme diaminopimelic acid phosphonate analog; peptide diaminopimelic phosphonate analog prepn antibacterial

IT Enzymes
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(DAP; stereospecific synthesis of phosphonate analogs of diaminopimelic acid and their interaction with DAP Enzymes)

IT Bactericides, Disinfectants, and Antiseptics
(preparation of peptide derivs. of diaminopimelic acid phosphonate analogs and their antibacterial activity)

IT Peptides, preparation
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(phosphono-, preparation of peptide derivs. of diaminopimelic acid phosphonate analogs and their antibacterial activity)

IT Synthesis
(stereoselective, stereospecific synthesis of phosphonate analogs of diaminopimelic acid and their interaction with DAP Enzymes)

IT 163705-98-4P 163705-99-5P 163877-32-5P 163877-33-6P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(preparation of peptide derivs. of diaminopimelic acid phosphonate analogs and their antibacterial activity)

IT 1948-31-8 2224-52-4 163706-00-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of peptide derivs. of diaminopimelic acid phosphonate analogs and their antibacterial activity)

IT 27317-69-7P 39743-84-5P 163705-97-3P 163877-29-0P 163877-30-3P 163877-31-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of peptide derivs. of diaminopimelic acid phosphonate analogs and their antibacterial activity)

IT 9024-22-0 9024-75-3 60894-21-5
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(stereospecific synthesis of phosphonate analogs of diaminopimelic acid and their interaction with DAP Enzymes)

IT 163877-14-3P 163877-15-4P 163877-18-7P 163877-19-8P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)
(stereospecific synthesis of phosphonate analogs of diaminopimelic acid and their interaction with DAP Enzymes)

IT 583-93-7DP, phosphonate analogs 13598-36-2DP, Phosphonic acid, diaminopimelic acid analogs 137407-98-8P 163877-23-4P 163877-28-9P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(stereospecific synthesis of phosphonate analogs of diaminopimelic acid and their interaction with DAP Enzymes)

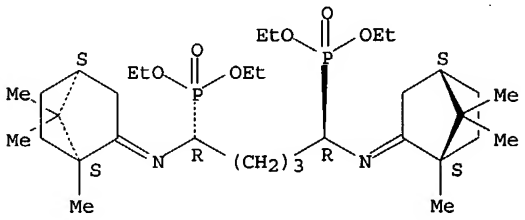
IT 109-64-8, 1.3-Dibromopropane 101055-56-5 101055-57-6 104549-54-4 139563-58-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(stereospecific synthesis of phosphonate analogs of diaminopimelic acid and their interaction with DAP Enzymes)

IT 163705-93-9P 163705-94-0P 163705-95-1P **163705-96-2P**
163877-13-2P 163877-16-5P 163877-17-6P 163877-20-1P 163877-21-2P
163877-22-3P 163877-24-5P 163877-25-6P
163877-26-7P 163877-27-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(stereospecific synthesis of phosphonate analogs of diaminopimelic acid and their interaction with DAP Enzymes)

IT **163705-96-2P 163877-22-3P 163877-24-5P**
163877-25-6P 163877-26-7P 163877-27-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(stereospecific synthesis of phosphonate analogs of diaminopimelic acid and their interaction with DAP Enzymes)

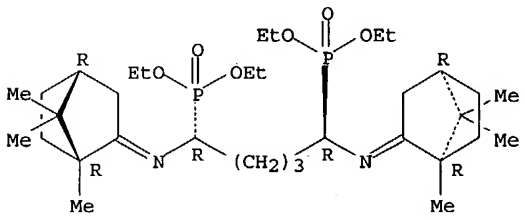
RN 163705-96-2 HCAPLUS
CN Phosphonic acid, [1,5-bis[(1,7,7-trimethylbicyclo[2.2.1]hept-2-ylidene)amino]-1,5-pentanediyl]bis-, tetraethyl ester, [1S-[1.alpha.,2[1S*,5S*(1'R*,4'R*)],4.alpha.]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry unknown.



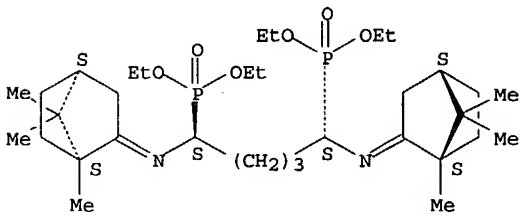
RN 163877-22-3 HCAPLUS
CN Phosphonic acid, [1,5-bis[(1,7,7-trimethylbicyclo[2.2.1]hept-2-ylidene)amino]-1,5-pentanediyl]bis-, tetraethyl ester, [1R-[1.alpha.,2[1R*,5R*(1R*,4R*)],4.alpha.]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry unknown.



RN 163877-24-5 HCAPLUS
CN Phosphonic acid, [1,5-bis[(1,7,7-trimethylbicyclo[2.2.1]hept-2-ylidene)amino]-1,5-pentanediyl]bis-, tetraethyl ester, [1S-[1.alpha.,2[1R*,5R*(1R*,4R*)],4.alpha.]]- (9CI) (CA INDEX NAME)

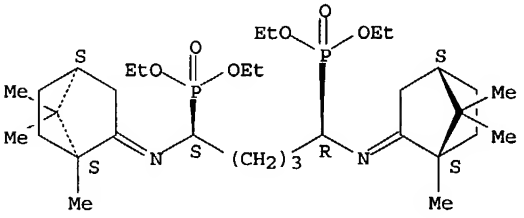
Absolute stereochemistry.
Double bond geometry unknown.



RN 163877-25-6 HCAPLUS
CN Phosphonic acid, [1,5-bis[(1,7,7-trimethylbicyclo[2.2.1]hept-2-

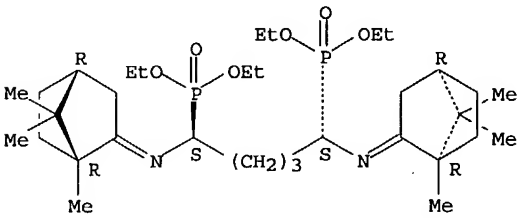
ylidene)amino]-1,5-pentanediyl]bis-, tetraethyl ester, [1S-[1.alpha.,2[1R*,5S*(1R*,4R*)],4.alpha.]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry unknown.



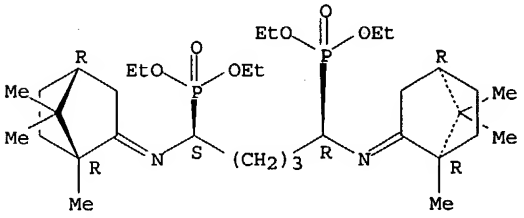
RN 163877-26-7 HCAPLUS
CN Phosphonic acid, [1,5-bis[(1,7,7-trimethylbicyclo[2.2.1]hept-2-ylidene)amino]-1,5-pentanediyl]bis-, tetraethyl ester, [1R-[1.alpha.,2[1S*,5S*(1R*,4R*)],4.alpha.]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry unknown.

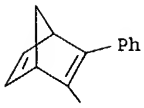


RN 163877-27-8 HCAPLUS
CN Phosphonic acid, [1,5-bis[(1,7,7-trimethylbicyclo[2.2.1]hept-2-ylidene)amino]-1,5-pentanediyl]bis-, tetraethyl ester, [1R-[1.alpha.,2[1R*,5S*(1R*,4R*)],4.alpha.]]- (9CI) (CA INDEX NAME)

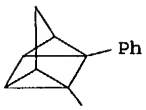
Absolute stereochemistry.
Double bond geometry unknown.



L49 ANSWER 11 OF 27 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1994:630119 HCAPLUS
DN 121:230119
ED Entered STN: 12 Nov 1994
TI Valence isomerization of amides of 3-phenylnorbornadiene-2-carboxylic acid
AU Chernouvamov, V. A.; Dubonosov, A. D.; Popova, L. L.; Galichev, S. V.; Borodkin, G. S.; Bren, V. A.; Minkin, V. I.
CS Rostov. Gos. Univ., Rostov, Russia
SO Zhurnal Organicheskoi Khimii (1993), 29(11), 2148-52
CODEN: ZORKAE; ISSN: 0514-7492
DT Journal
LA Russian
CC 22-6 (Physical Organic Chemistry)
Section cross-reference(s): 52
GI



I



II

AB Photoisomerization of norbornadienes I [R = (un)substituted Ph, .alpha.- and .beta.-naphthyl] at .lambda.max of the long-wavelength absorption (313 nm) afforded quadricyclanes II with quantum yields of up to 0.71 (for R = C6H4CO2Et-4). Electron-accepting R increase, and electron-donating substituents decrease the quantum yield relative to R = Ph; however, the limiting .lambda. values for I and II become similar for electron-accepting R, which is undesirable for solar energy storage. II are converted to I in presence of MoO3.

ST arylamide phenylnorbornadienecarboxylic acid photochem valence isomerization; quadricyclane; substituent effect photoisomerization norbornadiene deriv

IT Isomerization catalysts
(molybdenum trioxide, for arylamides of phenylquadricyclanecarboxylic acid to norbornadienes)

IT Isomerization
Kinetics of isomerization
(of arylamides of phenylquadricyclanecarboxylic acid in presence of molybdenum trioxide)

IT Substituent effect
(on photochem. valence isomerization of 3-phenylnorbornadiene-2-carboxylic acid arylamides)

IT Amides, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(aryl, of 3-phenylnorbornadiene-2-carboxylic acid, photochem. valence isomerization of, substituent effect on)

IT Isomerization
(valence, photochem., of arylamides of 3-phenylnorbornadiene-2-carboxylic acid, substituent effect on)

IT 542-92-7, Cyclopentadiene, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(Diels-Alder cycloaddn. with phenylpropiolic acid chloride)

IT 62-53-3, Aniline, reactions 91-59-8, .beta.-Naphthylamine 94-09-7, 4-(Ethoxycarbonyl)aniline 95-53-4, 2-Methylaniline, reactions 99-09-2, 3-Nitroaniline 99-92-3, 4-Acetylaniline 104-94-9, 4-Methoxyaniline 106-49-0, 4-Methylaniline, reactions 119-90-4, 4,4'-Diamino-3,3'-dimethoxybiphenyl 134-32-7, .alpha.-Naphthylamine
RL: RCT (Reactant); RACT (Reactant or reagent)
(amidation with, of 3-phenylnorbornadiene-2-carboxylic acid chloride)

IT 1313-27-5, Molybdenum oxide (MoO3), uses
RL: CAT (Catalyst use); USES (Uses)
(catalysts, for isomerization of phenylquadricyclanecarboxylic acid arylamides to norbornadiene)

IT 637-44-5, Phenylpropiolic acid
RL: PRP (Properties)
(conversion to acid chloride)

IT 7299-58-3P, Phenylpropiolic acid chloride
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and Diels-Alder cycloaddn. with cyclopentadiene)

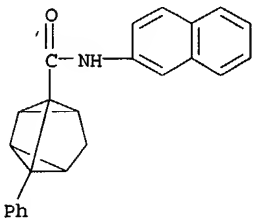
IT 158198-05-1P, 3-Phenylnorbornadiene-2-carboxylic acid chloride
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and amidation of, with arylamines)

IT 158197-96-7P 158197-97-8P 158197-98-9P 158197-99-0P 158198-00-6P 158198-01-7P 158198-02-8P **158198-03-9P** 158198-04-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and isomerization of, to norbornadiene derivative in presence of molybdenum trioxide)

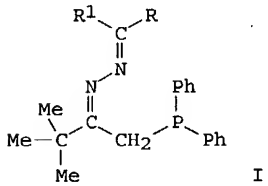
IT 158197-86-5P 158197-87-6P 158197-88-7P 158197-89-8P 158197-90-1P 158197-91-2P 158197-92-3P 158197-94-5P 158197-95-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and photochem. valence isomerization of, to quadricyclane derivative)

IT 158197-93-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

IT **158198-03-9P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and isomerization of, to norbornadiene derivative in presence of molybdenum trioxide)
RN 158198-03-9 HCAPLUS
CN Tetracyclo[3.2.0.02,7.04,6]heptane-1-carboxamide, N-2-naphthalenyl-5-phenyl- (9CI) (CA INDEX NAME)



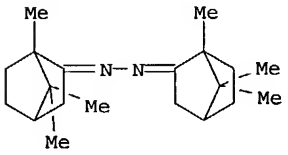
L49 ANSWER 12 OF 27 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1994:620076 HCAPLUS
DN 121:220076
ED Entered STN: 29 Oct 1994
TI A general method of promoting agostic interactions (Ru-Ha-C) using azine phosphines
AU Perea, Sarath D.; Shaw, Bernard L.
CS Sch. Chem., Univ. Leeds, Leeds, LS2 9JT, UK
SO Journal of the Chemical Society, Chemical Communications (1994), (10), 1201-2
CODEN: JCCCAT; ISSN: 0022-4936
DT Journal
LA English
CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 29
GI



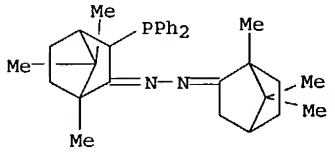
I

AB Treatment of [RuCl2(PPh3)3] with azine phosphines (I R = CMe3, C6H4NMe2-4-me, CH:CHPh, R1 = Me, H, Me, resp.) gives complexes showing strong agostic interactions between Ru and C-H bonds of tert-Bu, Me, aryl or alkenyl groups in dynamic systems. For example, all 9 hydrogens of a tert-Bu group are agostically interacting with Ru on the NMR timescale at 20.degree..
ST ruthenium azine phosphine chloro prepn agostic; agostic bond ruthenium azine phosphine complex
IT Bond
(agostic, in ruthenium azine phosphine chloro complexes, general preparation method for)
IT **156857-19-1**
RL: RCT (Reactant); RACT (Reactant or reagent)
(butylation and reaction of, with diphenylphosphine chloride)
IT 75-97-8 100-10-7, 4-Dimethylaminobenzaldehyde 122-57-6, Benzylidene acetone
RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation reaction of, with phosphine hydrazone)
IT 144116-28-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation reaction of, with with aldehydes or ketones)
IT **156783-24-3P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

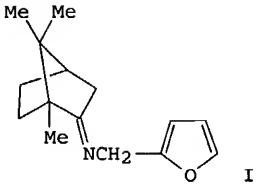
(preparation and reaction of, with ruthenium chloro phosphine complex)
IT 155606-61-4P **156783-25-4P** 156783-26-5P 156783-27-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of, with with ruthenium chloro phosphine complex)
IT 158273-99-5P 158274-00-1P 158274-01-2P 158274-02-3P 158274-03-4P 158308-33-9P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
IT 15529-49-4, Dichlorotris(triphenylphosphine)ruthenium
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with azine phosphines)
IT 1079-66-9, Diphenylphosphine chloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with butylated camphorazine)
IT 143627-09-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with ruthenium chloro phosphine complex)
IT **156857-19-1**
RL: RCT (Reactant); RACT (Reactant or reagent)
(butylation and reaction of, with diphenylphosphine chloride)
RN 156857-19-1 HCAPLUS
CN Bicyclo[2.2.1]heptan-2-one, 1,7,7-trimethyl-, (1,7,7-trimethylbicyclo[2.2.1]hept-2-ylidene)hydrazone, [1S-[1.alpha.,2(1R*,4R*),4.alpha.]]- (9CI) (CA INDEX NAME)



IT **156783-25-4P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of, with with ruthenium chloro phosphine complex)
RN 156783-25-4 HCAPLUS
CN Bicyclo[2.2.1]heptan-2-one, 3-(diphenylphosphino)-1,7,7-trimethyl-, (1,7,7-trimethylbicyclo[2.2.1]hept-2-ylidene)hydrazone, [1S-[1.alpha.,2(1R*,4R*),3.beta.,4.alpha.]]- (9CI) (CA INDEX NAME)



L49 ANSWER 13 OF 27 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1993:233794 HCAPLUS
DN 118:233794
ED Entered STN: 12 Jun 1993
TI Studies on the asymmetric synthesis of (R)-.alpha.-alkylfurfurylamines
AU Liu, Guilan; Hu, Wenhao; Deng, Jingen; Mi, Aiqiao; Jiang, Yaozhong
CS Chengdu Inst. Org. Chem., Acad. Sin., Chengdu, 610015, Peop. Rep. China
SO Huaxue Xuebao (1993), 51(1), 73-8
CODEN: HHHPA4; ISSN: 0567-7351
DT Journal
LA Chinese
CC 27-6 (Heterocyclic Compounds (One Hetero Atom))
OS CASREACT 118:233794
GI



I

AB (R)-.alpha.-Alkyl-furfurylamines are synthesized by asym. alkylation of (+)-camphor ketimine I obtained from furfurylamine. The diastereoselectivities ranging from 5.apprx.67% are determined by 1H NMR spectra of alkylation products. Using 3-diiodopropane and dibromoxylane as alkylating reagents, diimine derivs. are formed. However, 1,2-dibromoethane gives 2 coupling products.

ST furfurylamine alpha alkyl asym synthesis; camphor ketimine furfurylamine asym alkylation

IT Asymmetric synthesis and induction
(of .alpha.-alkylfurfurylamines)

IT Alkylation
(stereoselective, of furfurylamine derivative)

IT 74-88-4, reactions 75-26-3, Isopropyl bromide 91-13-4, o-Bis(bromomethyl)benzene 100-39-0, Benzyl bromide 106-93-4, 1,2-Dibromoethane 106-95-6, Allyl bromide, reactions 627-31-6, 1,3-Diiodopropane 824-94-2, p-Methoxybenzyl chloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(alkylation by, of furfurylamine derivative)

IT 132523-42-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(asym. alkylation of)

IT 132523-44-5P 132523-46-7P 132523-48-9P 132523-50-3P 132523-52-5P
RL: SPN (Synthetic preparation); PREP (Preparation)
(asym. synthesis of)

IT 147356-49-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and oxidation of)

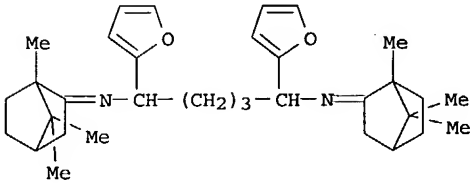
IT 132523-43-4P 132523-45-6P 132523-47-8P 132523-49-0P 132523-51-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of, with hydroxylamine)

IT 37002-52-1P **132523-35-4P** 132523-36-5P **132617-80-2P** **132617-81-3P** 132617-82-4P 132617-83-5P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

IT **132523-35-4P** **132617-80-2P** **132617-81-3P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

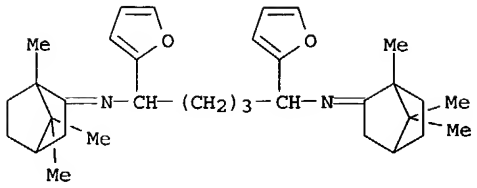
RN 132523-35-4 HCAPLUS

CN 1,5-Pentanediamine, 1,5-di-2-furanyl-N,N'-bis(1,7,7-trimethylbicyclo[2.2.1]hept-2-ylidene)-, [1R-[1.alpha.,2[1S*,5S*(1R*,4R*)],4.alpha.]]- (9CI) (CA INDEX NAME)

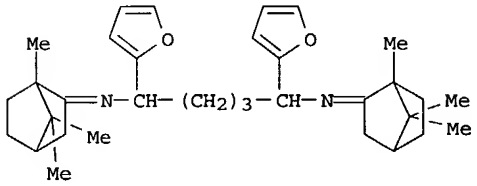


RN 132617-80-2 HCAPLUS

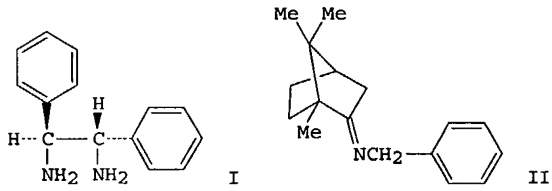
CN 1,5-Pentanediamine, 1,5-di-2-furanyl-N,N'-bis(1,7,7-trimethylbicyclo[2.2.1]hept-2-ylidene)-, [1R-[1.alpha.,2[1R*,5S*(1R*,4R*)],4.alpha.]]- (9CI) (CA INDEX NAME)



RN 132617-81-3 HCAPLUS
CN 1,5-Pentanediamine, 1,5-di-2-furanyl-N,N'-bis(1,7,7-trimethylbicyclo[2.2.1]hept-2-ylidene)-, [1R-[1.alpha.,2[1R*,5R*(1R*,4R*)],4.alpha.]]- (9CI) (CA INDEX NAME)



L49 ANSWER 14 OF 27 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1992:6747 HCAPLUS
DN 116:6747
ED Entered STN: 11 Jan 1992
TI Asymmetric synthesis. XIV. TiCl(OCHMe2)3-promoted asymmetric coupling reaction of d-camphor ketimine anion
AU Jiang, Yaozhong; Hu, Wenhao; Deng, Jingen; Liu, Giulan
CS Chengdu Inst. Org. Chem., Acad. Sin., Chengdu, 610015, Peop. Rep. China
SO Synthetic Communications (1991), 21(17), 1755-61
CODEN: SYNCAV; ISSN: 0039-7911
DT Journal
LA English
CC 30-10 (Terpenes and Terpenoids)
OS CASREACT 116:6747
GI



I II

AB Optically active 1,2-diphenylethylenediamine (I) is obtained by asym. oxidative coupling reaction of d-camphor ketimine anion II. Among various oxidating agents, TiCl(OCHMe)3 is better than I2, Br2, CuCl2, FeCl3 and BrCH2CH2Br.
ST chlorotitanium triisopropoxide protonated oxidative coupling; camphor ketimine dimerization oxidative coupling; diphenylethylenediamine; ethylenediamine diphenyl; asym oxidative coupling camphor ketimine
IT Oxidizing agents
(chlorotitanium isopropoxide for camphor ketimine)
IT Stereochemistry
(of chlorotitanium isopropoxide-promoted oxidative coupling of camphor ketimine)
IT Asymmetric synthesis and induction
(of diphenylethylenediamine via oxidative coupling of camphor ketimine)
IT Synthons
(chiral, camphor as auxiliary in asym. oxidative coupling reaction)
IT Coupling reaction
(oxidative, chlorotitanium isopropoxide-promoted, of camphor ketimine)
IT 63765-03-7
RL: PRP (Properties)

(lithiation and chlorotitanium isopropoxide-promoted oxidative coupling of)

IT 106-93-4, 1,2-Dibromoethane 7447-39-4, Cupric chloride, reactions 7553-56-2, Iodine, reactions 7705-08-0, Ferric chloride, reactions 7726-95-6, Bromine, reactions 20717-86-6, Chlorotitanium triisopropoxide
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidizing agent for asym. coupling of camphor ketimine)

IT 137359-91-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and chlorotitanium isopropoxide-promoted oxidative coupling of)

IT 29841-69-8P **137767-94-3P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and crystal structure of)

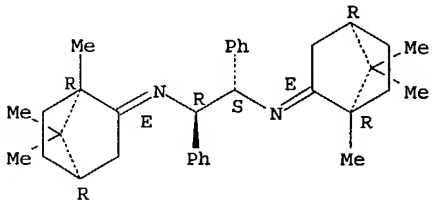
IT **137359-92-3P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of, with hydroxylamine)

IT **137767-94-3P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and crystal structure of)

RN 137767-94-3 HCAPLUS

CN 1,2-Ethanediamine, 1,2-diphenyl-N,N'-bis(1,7,7-trimethylbicyclo[2.2.1]hept-2-ylidene)-, [1R-[1.alpha.,2E[1R*,2S*(1R*,2E,4R*)],4.alpha.]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.

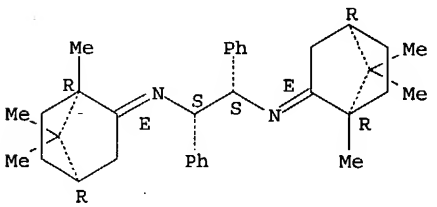


IT **137359-92-3P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of, with hydroxylamine)

RN 137359-92-3 HCAPLUS

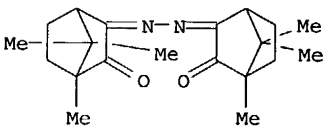
CN 1,2-Ethanediamine, 1,2-diphenyl-N,N'-bis(1,7,7-trimethylbicyclo[2.2.1]hept-2-ylidene)-, [1R-[1.alpha.,2E[1S*,2S*(1R*,2E,4R*)],4.alpha.]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



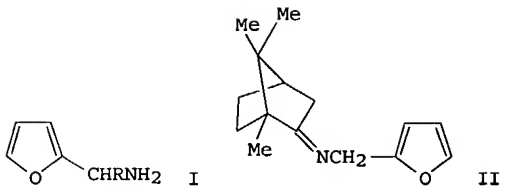
L49 ANSWER 15 OF 27 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1991:153790 HCAPLUS
DN 114:153790
ED Entered STN: 19 Apr 1991
TI Photochemistry of bichromophoric molecules with camphor structure. II: The photochemistry of 3-diazocamphor
AU Rau, H.; Bokel, M.
CS Inst. Chem., Univ. Hohenheim, Stuttgart, 7000/70, Germany
SO Journal of Photochemistry and Photobiology, A: Chemistry (1990), 53(3), 311-22
CODEN: JPPCEJ; ISSN: 1010-6030
DT Journal

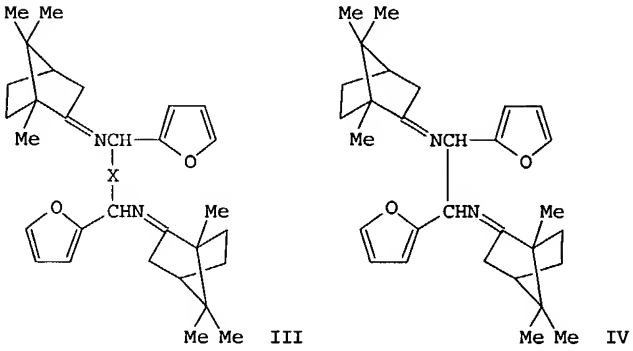
LA English
CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 22
AB Irradiation of 3-diazocamphor (I) in ethanol mainly yields an ester, which is in agreement with the literature. In addition camphor-3-diazirine compound is formed with a 25 .+-. 5% yield. A small amount of camphor is detected at .lambda.irr >400 nm and a trace of camphorquinone azine at .lambda.irr = 313 nm. In n-hexane at .lambda.irr >400 nm the main product is the diazirine compound; some tricyclanone and enedione are also formed. The diazirine is thermally rather stable but reacts very slowly (t1/2 = 16 h at 333 K in EtOH) to form back I with a 20% yield. The diazirine reacts on irradiation with a quantum yield of 70 .+-. 10%. Direct N2 extrusion and reformation of diazocamphor (37 .+-. 5%) are parallel reactions.
ST diazocamphor photochem diazo diazirine isomerization; photolysis diazocamphor nitrogen elimination
IT Solvent effect
(in photolysis of diazocamphor)
IT Photolysis
(of diazocamphor, solvent effect on product formation in)
IT Isomerization
(photochem., diazirine to diazomethane, in photolysis of diazocamphor)
IT Elimination reaction
(photochem., of nitrogen, in photolysis of diazocamphor)
IT 76-22-2P, Camphor 132736-29-9P 132757-99-4P **132830-79-6P**
RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, in photolysis of diazocamphor)
IT 132831-80-2P
RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, in photolysis of diazocamphor in ethanol)
IT 875-99-0P, Tricyclanone 94167-43-8P
RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, in photolysis of diazocamphor in hexane solution)
IT 132736-28-8P
RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, in photolysis of diazocamphor, photochem. of)
IT 64-17-5, Ethanol, uses and miscellaneous 110-54-3, Hexane, uses and miscellaneous
RL: USES (Uses)
(photolysis of diazocamphor in solution of, products from)
IT 14487-70-8, 3-Diazocamphor
RL: RCT (Reactant); RACT (Reactant or reagent)
(photolysis of, solvent effect on isomerization and nitrogen elimination in)
IT **132830-79-6P**
RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, in photolysis of diazocamphor)
RN 132830-79-6 HCAPLUS
CN Bicyclo[2.2.1]heptane-2,3-dione, 1,7,7-trimethyl-, 3-[(4,7,7-trimethyl-3-oxobicyclo[2.2.1]hept-2-ylidene)hydrazone], [1.alpha.,3Z(1S*,2Z,4R*),4.alpha.]- (9CI) (CA INDEX NAME)



L49 ANSWER 16 OF 27 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1991:122728 HCAPLUS
DN 114:122728
ED Entered STN: 06 Apr 1991
TI Asymmetric synthesis. XI. Stereoselective synthesis of .alpha.-alkyl-2-furfurylamines via d-camphor ketimine intermediate
AU Jiang, Yaozhong; Deng, Jingen; Hu, Wenhao; Liu, Giulan; Mi, Aiqiao
CS Chengdu Inst. Org. Chem., Acad. Sin., Chengdu, 610015, Peop. Rep. China
SO Synthetic Communications (1990), 20(19), 3077-83
CODEN: SYNCAV; ISSN: 0039-7911
DT Journal
LA English
CC 30-10 (Terpenes and Terpenoids)
OS CASREACT 114:122728

GI





AB (R)-.alpha.-Alkyl-2-furfurylamines I (R = Me, CH2:CHCH2, Me2CH, PhCH2, p-MeOC6H4CH2), ranging from 5-67% d.e., are obtained by asym. alkylation of d-camphor ketimine II. Using 1,3-diiodopropane and dibromoxylene as alkylating reagents, diimine derivs. III [X = CH2CH2CH2, 1,2-C6H4(CH2)2], resp. are formed. However, 1,2-dibromoethane gives coupling product IV.

ST asym synthesis alkylfurfurylamine alkylated furfurylamine; camphor ketimine alkylation stereoselectivity

IT Stereochemistry
(of alkylation of D-camphor N-furfurylketimine)

IT Asymmetric synthesis and induction
(of .alpha.-alkylfurfurylamine from d-camphor)

IT Synthons
(chiral, d-camphor for .alpha.-alkylfurfurylamines)

IT Alkylation
(stereoselective, of D-camphor N-furfurylketimine, .alpha.-alkylfurfurylamines via)

IT 132523-44-5P 132523-46-7P 132523-48-9P 132523-50-3P 132523-52-5P
RL: SPN (Synthetic preparation); PREP (Preparation)
(asym. synthesis of)

IT 464-49-3, d-Camphor
RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation of, with furfurylamine)

IT 617-89-0, Furfurylamine
RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation of, with d-camphor)

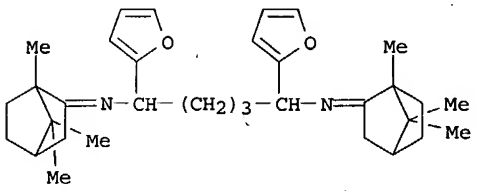
IT 132523-42-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and stereoselective alkylation of)

IT 132523-43-4P 132523-45-6P 132523-47-8P 132523-49-0P 132523-51-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and transamination of, with hydroxylamine, .alpha.-alkylfurfurylamine by)

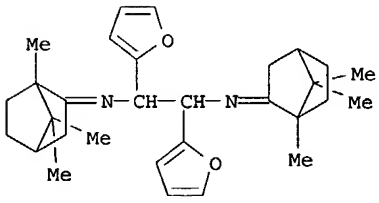
IT **132523-35-4P** 132523-36-5P **132523-37-6P**
132617-80-2P **132617-81-3P** 132617-82-4P 132617-83-5P
132617-84-6P **132617-85-7P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(stereoselective preparation of, from d-camphor N-furfurylketimine)

IT **132523-35-4P** **132523-37-6P** **132617-80-2P**
132617-81-3P **132617-84-6P** **132617-85-7P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(stereoselective preparation of, from d-camphor N-furfurylketimine)

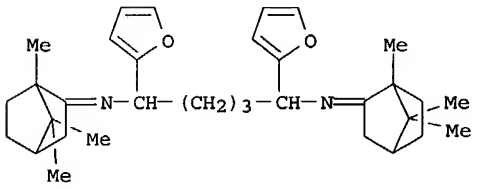
RN 132523-35-4 HCAPLUS
CN 1,5-Pentanediamine, 1,5-di-2-furanyl-N,N'-bis(1,7,7-trimethylbicyclo[2.2.1]hept-2-ylidene)-, [1R-[1.alpha.,2[1S*,5S*(1R*,4R*)],4.alpha.]]- (9CI) (CA INDEX NAME)



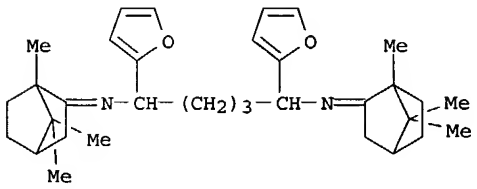
RN 132523-37-6 HCAPLUS
CN 1,2-Ethanediamine, 1,2-di-2-furanyl-N,N'-bis(1,7,7-trimethylbicyclo[2.2.1]hept-2-ylidene)-, [1R-[1.alpha.,2[1S*,2S*(1R*,4R*)],4.alpha.]]- (9CI) (CA INDEX NAME)



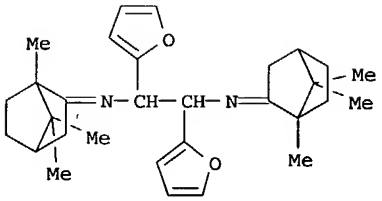
RN 132617-80-2 HCAPLUS
CN 1,5-Pentanediamine, 1,5-di-2-furanyl-N,N'-bis(1,7,7-trimethylbicyclo[2.2.1]hept-2-ylidene)-, [1R-[1.alpha.,2[1R*,5S*(1R*,4R*)],4.alpha.]]- (9CI) (CA INDEX NAME)



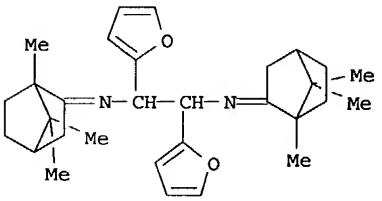
RN 132617-81-3 HCAPLUS
CN 1,5-Pentanediamine, 1,5-di-2-furanyl-N,N'-bis(1,7,7-trimethylbicyclo[2.2.1]hept-2-ylidene)-, [1R-[1.alpha.,2[1R*,5R*(1R*,4R*)],4.alpha.]]- (9CI) (CA INDEX NAME)



RN 132617-84-6 HCAPLUS
CN 1,2-Ethanediamine, 1,2-di-2-furanyl-N,N'-bis(1,7,7-trimethylbicyclo[2.2.1]hept-2-ylidene)-, [1R-[1.alpha.,2[1R*,2S*(1R*,4R*)],4.alpha.]]- (9CI) (CA INDEX NAME)

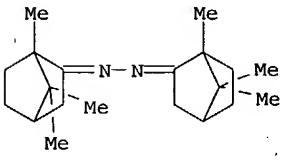


RN 132617-85-7 HCAPLUS
CN 1,2-Ethanediamine, 1,2-di-2-furanyl-N,N'-bis(1,7,7-trimethylbicyclo[2.2.1]hept-2-ylidene)-, [1R-[1.alpha.,2[1R*,2R*(1R*,4R*)],4.alpha.]]- (9CI) (CA INDEX NAME)



L49 ANSWER 17 OF 27 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1989:231896 HCAPLUS
DN 110:231896
ED Entered STN: 25 Jun 1989
TI On the mechanism of formation of azines from hydrazones
AU Kolb, Vera M.; Kuffel, Andrew C.; Spiwek, Harry O.; Janota, Timothy E.
CS Dep. Chem., Univ. Wisconsin Parkside, Kenosha, WI, 531410, USA
SO Journal of Organic Chemistry (1989), 54(11), 2771-5
CODEN: JOCEAH; ISSN: 0022-3263
DT Journal
LA English
CC 30-10 (Terpenes and Terpenoids)
Section cross-reference(s): 25
OS CASREACT 110:231896
AB Treating camphor with N2H4.H2O in EtOH with or without HCl catalyst gave a low yield of hydrazone which on standing gave the azine. Conjugated ketones such as camphorquinone, PhCOMe, p-O2NC6H4COMe, and p-MeOC6H4COMe gave predominantly hydrazones and either no azines or traces of azines. 2-Adamantanone gave both hydrazone and azine; on standing the mixture was converted completely to azine. An addition-elimination mechanism for these conversions of hydrazones to azines is questioned.
ST terpene ketone hydrazone azine conversion; acetophenone hydrazone azine; camphorquinone hydrazone azine; adamantanone hydrazone azine; ketone terpene hydrazone azine conversion
IT Azines
Hydrazones
RL: FORM (Formation, nonpreparative)
(formation of, from monoterpenoid and aryl ketones)
IT Ketones, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(aryl, reaction of, with hydrazone hydrate, hydrazones and azines from)
IT 61833-37-2P 120443-05-2P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and conversion to azine)
IT 729-43-1P 6310-14-1P 7803-57-8P, Hydrazine hydrate 13466-30-3P 21399-34-8P, 4'-Methoxyacetophenone azine 28153-22-2P 39555-34-5P, 2-Adamantanone azine 86707-47-3P 86707-48-4P **120443-06-3P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
IT 100-06-1, 4'-Methoxyacetophenone
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with hydrazine hydrate hydrazone and azine from)
IT 464-49-3 700-58-3, 2-Adamantanone
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with hydrazine hydrate with or without acidic catalysts)
IT 98-86-2, Acetophenone, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with hydrazine hydrate, hydrazone and azine from)
IT 100-19-6, 4'-Nitroacetophenone
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with hydrazine hydrate, hydrazone from)
IT 10334-26-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with hydrazine hydrate, stereoisomeric hydrazones from)
IT **120443-06-3P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 120443-06-3 HCAPLUS
CN Bicyclo[2.2.1]heptan-2-one, 1,7,7-trimethyl-, (1,7,7-trimethylbicyclo[2.2.1]hept-2-ylidene)hydrazone, [1S-[1.alpha.,2E(1R*,2E,4S*),4.alpha.]]- (9CI) (CA INDEX NAME)

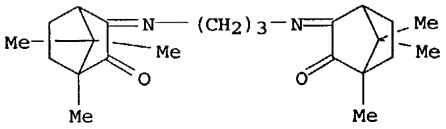


L49 ANSWER 18 OF 27 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1987:525781 HCAPLUS
DN 107:125781
ED Entered STN: 05 Oct 1987
TI Role of metal ions in reactions of .alpha.-bornane-2,3-dione with diamines
AU Kashalkar, R. V.; Mukhedkar, V. A.; Mukhedkar, A. J.
CS Dep. Chem., Univ. Poona, Pune, 411 007, India
SO Indian Journal of Chemistry, Section A: Inorganic, Physical, Theoretical & Analytical (1987), 26A(3), 225-9
CODEN: IJCADU; ISSN: 0376-4710
DT Journal
LA English
CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 24
AB Synthesis of diimines of d-bornane-2,3-dione with imine groups at C(2) was achieved by condensation of the diamines and d-bornane-2,3-dione in the presence of metal ions (Ni2+ and Cu2+). Complexes of these metal ions and also of Co2+ and Pd2+ with similar diimine ligands containing imine groups at C(3) positions were also prepared and characterized by elemental anal., magnetic susceptibility and spectral (IR, 1H NMR) methods.
ST transition metal Schiff diamine bornanedione; diimine bornanedione diamine template prepn; nickel diimine bornanedione diamine; copper diimine bornanedione diamine; cobalt diimine bornanedione diamine; palladium diimine bornanedione diamine
IT Schiff bases
RL: SPN (Synthetic preparation); PREP (Preparation)
(diamine-d-bornanedione, preparation of, by template condensation)
IT Stereochemistry
(of template condensation reaction of .alpha.-bornanedione with diamines in presence of transition metal ions)
IT Condensation reaction
(template, of .alpha.-bornanedione with diamines in presence of transition metal ions)
IT Transition metals, compounds
(bornanedione-diamine Schiff-base complexes)
IT Amines, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(di-, template condensation reactions of, with d-bornanedione in presence of transition metal ions)
IT 78-90-0, 1,2-Propanediamine 107-15-3, Ethylenediamine, reactions
109-76-2, 1,3-Propanediamine 110-60-1, 1,4-Butanediamine
RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation reaction of, with d-bornanedione, role of transition metal ions in)
IT 2767-84-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation reactions of, with diamines, role of transition metal ions in)
IT **23927-62-0P 109881-45-0P 109881-46-1P**

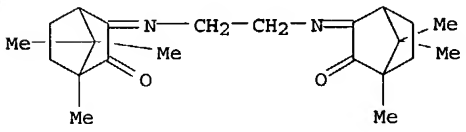
109881-47-2P 109881-48-3P 109881-49-4P
109881-50-7P 109894-82-8P 109896-16-4P 109896-17-5P
109896-18-6P 109896-19-7P 109896-20-0P 109896-21-1P 109896-22-2P
109896-23-3P 109896-24-4P 109896-25-5P 109896-26-6P 109896-27-7P
109896-28-8P 109896-29-9P 109896-30-2P 109896-31-3P 109896-32-4P
109896-33-5P 109896-34-6P 109896-35-7P 109896-36-8P 109896-37-9P
109896-38-0P 109896-39-1P 109896-40-4P 109910-78-3P 110305-33-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

IT **23927-62-0P 109881-45-0P 109881-46-1P**
109881-47-2P 109881-48-3P 109881-49-4P
109881-50-7P 109894-82-8P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

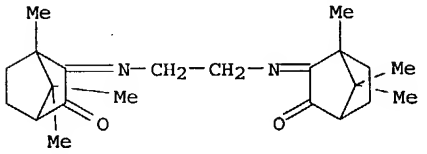
RN 23927-62-0 HCAPLUS
CN Bicyclo[2.2.1]heptan-2-one, 3,3'-(1,3-propanediyldinitrilo)bis[1,7,7-trimethyl-, [1.alpha.,3(1'R*,4'S*),4.alpha.]-(+)- (9CI) (CA INDEX NAME)



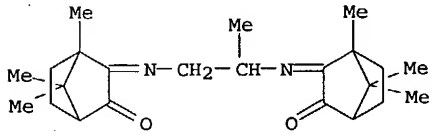
RN 109881-45-0 HCAPLUS
CN Bicyclo[2.2.1]heptan-2-one, 3,3'-(1,2-ethanediyldinitrilo)bis[1,7,7-trimethyl-, [1S-[1.alpha.,3(1'R*,4'S*),4.alpha.]]- (9CI) (CA INDEX NAME)



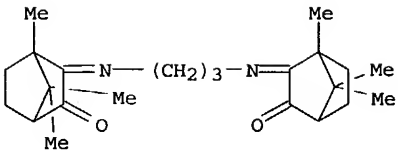
RN 109881-46-1 HCAPLUS
CN Bicyclo[2.2.1]heptan-2-one, 3,3'-(1,2-ethanediyldinitrilo)bis[4,7,7-trimethyl-, [1R-[1.alpha.,3(1'R*,4'S*),4.alpha.]]- (9CI) (CA INDEX NAME)



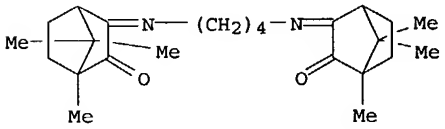
RN 109881-47-2 HCAPLUS
CN Bicyclo[2.2.1]heptan-2-one, 3,3'-[(1-methyl-1,2-ethanediyl)dinitrilo]bis[4,7,7-trimethyl- (9CI) (CA INDEX NAME)



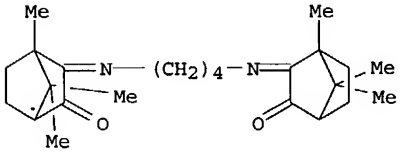
RN 109881-48-3 HCAPLUS
CN Bicyclo[2.2.1]heptan-2-one, 3,3'-(1,3-propanediyldinitrilo)bis[4,7,7-trimethyl-, [1R-[1.alpha.,3(1'R*,4'S*),4.alpha.]]- (9CI) (CA INDEX NAME)



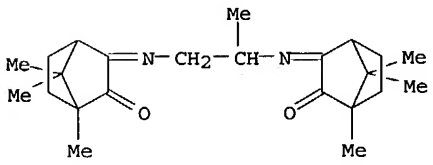
RN 109881-49-4 HCAPLUS
CN Bicyclo[2.2.1]heptan-2-one, 3,3'-(1,4-butanediyldinitrilo)bis[1,7,7-trimethyl-, [1S-[1.alpha.,3(1'R*,4'S*),4.alpha.]]- (9CI) (CA INDEX NAME)



RN 109881-50-7 HCAPLUS
CN Bicyclo[2.2.1]heptan-2-one, 3,3'-(1,4-butanediyldinitrilo)bis[4,7,7-trimethyl-, [1R-[1.alpha.,3(1'R*,4'S*),4.alpha.]]- (9CI) (CA INDEX NAME)

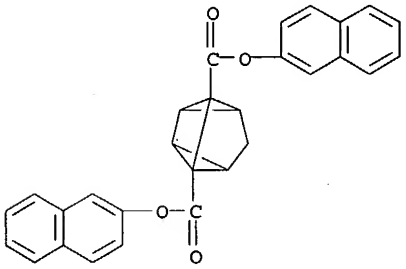


RN 109894-82-8 HCAPLUS
CN Bicyclo[2.2.1]heptan-2-one, 3,3'-[(1-methyl-1,2-ethanediyl)dinitrilo]bis[1,7,7-trimethyl- (9CI) (CA INDEX NAME)



L49 ANSWER 19 OF 27 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1987:195680 HCAPLUS
DN 106:195680
ED Entered STN: 13 Jun 1987
TI Synthesis and valence photoisomerization of naphthyl esters of norbornadienecarboxylic acids
AU Aloisi, Gian Gaetano; Favaro, Gianna; Spalletti, Anna; Cavicchio, Giancarlo; Marchetti, Valeria
CS Dip. Chim., Univ. Perugia, Perugia, I-06100, Italy
SO Gazzetta Chimica Italiana (1986), 116(6), 281-4
CODEN: GCITA9; ISSN: 0016-5603
DT Journal
LA English
CC 22-7 (Physical Organic Chemistry)
Section cross-reference(s): 52
AB Four 1- and 2-naphthyl esters of norbornadienecarboxylic acid and norbornadienedicarboxylic acid were prepared and the direct and sensitized photoisomerization studied. Direct irradiation of the esters gave several products, among which quadricyclane was present in a minor amount The benzophenone-sensitized irradiation was clean and high efficient to give quadricycling esters. The relatively high quantum yield for the photoreaction sensitized by the low energy donor by acetyl may also indicate a mechanism involving formation of a charge-transfer complex.
ST norbornadienecarboxylate naphthyl prepn photoisomerization; isomerization

photochem sensitized norbornadienedicarboxylate; quadricyclane
IT Isomerization
(photochem., of naphthyl norbornadienecarboxylates)
IT 698-40-8 15872-28-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(esterification of, with naphthols)
IT 100641-65-4P 108164-78-9P 108164-81-4P **108164-82-5P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and UV spectrum of)
IT 108164-79-0P 108164-80-3P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and photoisomerization of)
IT **108164-82-5P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and UV spectrum of)
RN 108164-82-5 HCAPLUS
CN Tetracyclo[3.2.0.02,7.04,6]heptane-1,5-dicarboxylic acid, di-2-naphthalenyl ester (9CI) (CA INDEX NAME)



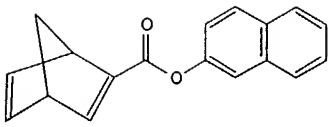
L49 ANSWER 20 OF 27 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1986:109280 HCAPLUS
DN 104:109280
ED Entered STN: 05 Apr 1986
TI Naphthyl norbornadienecarboxylate.
PA Dainippon Ink and Chemicals, Inc., Japan; Kawamura Physical and Chemical Research Institute
SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C07C069-753
ICS C09K005-00; F24J002-34
CC 25-24 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
Section cross-reference(s): 52
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 60123449	A2	19850702	JP 1983-229758	19831207
PRAI JP 1983-229758		19831207		

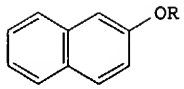
CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 60123449	ICM	C07C069-753
	ICS	C09K005-00; F24J002-34

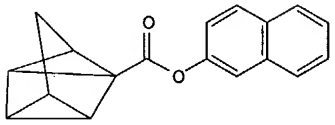
OS CASREACT 104:109280
GI



I



II



V

AB Title compound I, useful as a light energy-converting substance, was prepared by Diels-Alder reaction of II (R = COC.tplbond.CH) (III) with cyclopentadiene (IV). I may also be prepared by esterification of II (R = H) with 2-norbornadienecarboxylic acid. Thus, stirring III and IV in AcOEt at room temperature for 20 h gave 76.7% I, which was isomerized to V by solar irradiation for 1 h.

ST naphthalene norbornadienecarbonyloxy solar energy storage; light energy conversion norbornadienylcarbonyloxynaphthalene; solar energy conversion norbornadienylcarbonyloxynaphthalene; propioloyloxynaphthalene Diels Alder cyclopentadiene; quadricyclanecarboxylate naphthyl solar energy storage; photoisomerization naphthyl norbornadienecarboxylate solar storage; isomerization photochem norbornadienecarboxylate solar storage

IT Isomerization
(photochem., of norbornadienylcarbonyloxynaphthalene to quadricyclane derivative)

IT Energy
(solar, conversion of, naphthyl norbornadienecarboxylate for)

IT Energy
(solar, conversion of, naphthyl norbornadienecarboxylate isomerization in relation to)

IT 91805-17-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(Diels-Alder reaction of, with cyclopentadiene)

IT 542-92-7, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(Diels-Alder reaction of, with propioloyloxynaphthalene)

IT 471-25-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(esterification of, with hydroxynaphthalene, propioloyloxynaphthalene from)

IT 698-40-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(esterification of, with naphthol)

IT 135-19-3, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(esterification of, with norbornadienecarboxylic acid)

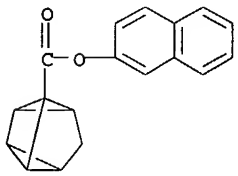
IT **100641-66-5P**
RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, by photoisomerization of norbornadiene derivative)

IT 100641-65-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as light energy-converting substance)

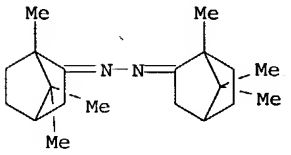
IT **100641-66-5P**
RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, by photoisomerization of norbornadiene derivative)

RN 100641-66-5 HCAPLUS

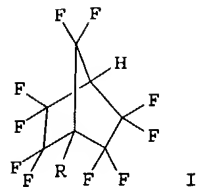
CN Tetracyclo[3.2.0.02,7.04,6]heptane-1-carboxylic acid, 2-naphthalenyl ester (9CI) (CA INDEX NAME)



L49 ANSWER 21 OF 27 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1984:191026 HCAPLUS
DN 100:191026
ED Entered STN: 08 Jun 1984
TI Photoelectron spectra and conformational behavior of azines
AU Kirste, Karl; Poppek, Rainer; Rademacher, Paul
CS Inst. Org. Chem., Univ. Essen-GHS, Essen, D-4300, Fed. Rep. Ger.
SO Chemische Berichte (1984), 117(3), 1061-8
CODEN: CHBEAM; ISSN: 0009-2940
DT Journal
LA German
CC 22-3 (Physical Organic Chemistry)
GI For diagram(s), see printed CA Issue.
AB The conformations of RR1C:NN:CRR1 (I; R, R1 = H, H; H, Me; H, Et; Me, Me; Et, Et; Et, Pr) and cyclic azines II (n = 3-6) and III were determined from their photoelectron spectra, and the interactions between the n and .pi. orbitals was examined by MNDO calcns. on I (R = R1 = H). The .pi.-ionization potentials of I, II, and III indicated s-trans conformations; the n ionization were of limited value.
ST conformation azine photoelectron spectra; ionization potential azine conformation; MO interaction azine conformation
IT Azines
RL: PRP (Properties)
(conformation of, photoelectron spectra in relation to)
IT Energy level
(correlation diagram, for azines)
IT Ionization potential and energy
Molecular orbital
Photoelectric emission
(of azines)
IT Conformation and Conformers
(of azines, photoelectron spectra in relation to)
IT 503-27-5 592-56-3 627-70-3 1530-17-2 4278-87-9 15601-98-6
20615-04-7 24214-70-8 **47180-21-2** 72593-07-8 76924-71-5
RL: PRP (Properties)
(conformation of, photoelectron spectrum in relation to)
IT 2053-29-4
RL: PRP (Properties)
(energy level correlation diagram for)
IT **47180-21-2**
RL: PRP (Properties)
(conformation of, photoelectron spectrum in relation to)
RN 47180-21-2 HCAPLUS
CN Bicyclo[2.2.1]heptan-2-one, 1,7,7-trimethyl-, (1,7,7-trimethylbicyclo[2.2.1]hept-2-ylidene)hydrazone (9CI) (CA INDEX NAME)



L49 ANSWER 22 OF 27 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1983:197655 HCAPLUS
DN 98:197655
ED Entered STN: 12 May 1984
TI Polyfluorobicyclo[2.2.1]heptanes. Part XII. 4H-Decafluorobicyclo[2.2.1]hept-1-yl isocyanate, amine and alcohol, and derivatives therefrom
AU Broughton, John S.; Lynch, Peter; Stephens, Robert; Tatlow, John Colin
CS Chem. Dep., Univ. Birmingham, Birmingham, B15 2TT, UK
SO Journal of Fluorine Chemistry (1983), 22(2), 123-32
CODEN: JFLCAR; ISSN: 0022-1139
DT Journal
LA English
CC 24-7 (Alicyclic Compounds)
OS CASREACT 98:197655
GI



I

AB Acid chloride I (R = ClCO) gave the corresponding isocyanate which readily afforded appropriate derivs. of carbamic acid, and substituted ureas I (R = PrO2CNH, PhNHCONH, etc.), all with the bridgehead moiety substituted on N. The 4H-bridgehead primary amine was made from the isocyanate and directly from the acid chloride. Diazotization converted it mainly to the bridgehead tertiary alc., with traces of the derived nitrite ester, and of the bridgehead chloride and dihydro compound Peroxide oxidation of the amine gave the bridgehead nitro compound

ST fluorobicycloheptanecarbonyl chloride substitution nucleophilic; fluorobicycloheptyl isocyanate amine alc carbamate

IT Substitution reaction, nucleophilic
(of decafluorobicycloheptencarbonyl chloride)

IT 74428-15-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(nucleophilic substitution of)

IT 85670-38-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and diazotization of)

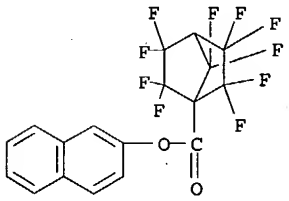
IT 85670-39-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and esterification of)

IT 85670-40-2P 85670-41-3P 85670-42-4P 85670-43-5P **85670-44-6P**
85670-45-7P 85670-46-8P 85670-47-9P 85670-48-0P 85670-49-1P
85670-50-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

IT **85670-44-6P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 85670-44-6 HCAPLUS

CN Bicyclo[2.2.1]heptane-1-carboxylic acid, 2,2,3,3,5,5,6,6,7,7-decafluoro-, 2-naphthalenyl ester (9CI) (CA INDEX NAME)



L49 ANSWER 23 OF 27 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1978:104814 HCAPLUS

DN 88:104814

ED Entered STN: 12 May 1984

TI Photolysis of 2-oxo-2,5-dihydro-1,3,4-oxadiazoles in the presence of olefins

AU Daniil, Dimitra; Meier, Herbert

CS Inst. Org. Chem., Univ. Tuebingen, Tuebingen, Fed. Rep. Ger.

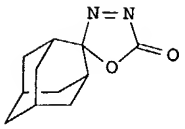
SO Tetrahedron Letters (1977), (36), 3155-8
CODEN: TELEAY; ISSN: 0040-4039

DT Journal

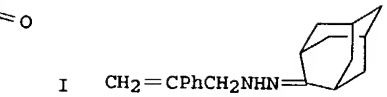
LA German

CC 25-5 (Noncondensed Aromatic Compounds)
Section cross-reference(s): 24, 28

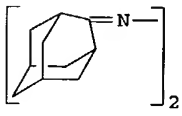
GI



I



II



III

AB The title oxadiazoles, prepared by cyclization of ketone semicarbazones, on irradiation in the presence of .alpha.-methylstyrene gave .alpha.-styrylmethyl hydrazones, parent ketones, and in some cases a sym. azine. E.g. oxadiazole I gave 64% hydrazone II, 30% azine III, and 6% adamantanone. Photolysis in the presence of cyclohexene gave a similar mixture of products.

ST oxadiazole olefin photolysis; hydrazone styrylmethyl; cyclohexenyl hydrazone

IT Photolysis
(of oxadiazoles, in presence of olefins)

IT 10281-41-1 65814-27-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(cyclization of, oxadiazole derivative from)

IT 110-83-8, reactions 25013-15-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(photochem. reaction of, with oxadiazoles)

IT 39930-75-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(photolysis of, with cyclohexene)

IT 28873-61-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(photolysis of, with methylstyrene and cyclohexene)

IT 65814-39-3P 65814-40-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and dimerization of)

IT 65814-28-0P 71927-66-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and photolysis of, with olefins)

IT 65814-30-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of, with ketones)

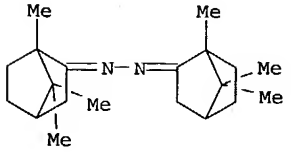
IT 20615-04-7P 39555-34-5P **47180-21-2P** 65814-31-5P
65814-32-6P 65814-33-7P 65814-34-8P 65814-35-9P 65814-36-0P
65814-37-1P 65814-38-2P 71927-67-8P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

IT 3360-54-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction, with hydrazine)

IT **47180-21-2P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

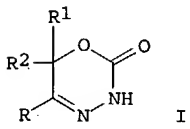
RN 47180-21-2 HCAPLUS

CN Bicyclo[2.2.1]heptan-2-one, 1,7,7-trimethyl-, (1,7,7-trimethylbicyclo[2.2.1]hept-2-ylidene)hydrazone (9CI) (CA INDEX NAME)



L49 ANSWER 24 OF 27 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1976:477307 HCAPLUS
DN 85:77307
ED Entered STN: 12 May 1984
TI Thermal and photochemical decomposition of dihydrooxadiazinones
AU Fuchs, B.; Kwalwasser, W. D.; Rosenblum, M.
CS Dep. Chem., Brandeis Univ., Waltham, MA, USA
SO Israel Journal of Chemistry (1976), Volume Date 1975, 13(2), 107-24
CODEN: ISJCAT; ISSN: 0021-2148
DT Journal
LA English
CC 22-7 (Physical Organic Chemistry)
GI



I

AB 3,6-Dihydro-1,3,4-oxadiazin-2-ones [I; R = Ph, Me; R1 = Ph, Me; RR1 = (CH2)n, n = 6-8; R2 = H, Me, R1R2 = (CH2)5], prepared from either .alpha.-ketols or from .alpha.-diketones and carbethoxyhydrazine, undergo thermal or photolytic (253.7 nm) decomposition to give N2, CO2 and olefins. Oxadiazinones derived from medium ring .alpha.-ketols give bicyclic hydrocarbons in addition to olefins. These are formed by decomposition of the intermediate vinyldiazene to vinyl radicals, followed by transannular H abstraction and alkyl radical addition to the olefin. A series of 5,6-dihydro-1,3,4-oxadiazin-2-ones are also prepared and their thermal and photolytic behavior studied.

ST thermolysis photolysis dihydrooxadiazinone; hydrooxadiazinone thermolysis photolysis; oxadiazinone dihydro thermolysis photolysis

IT Photolysis
(of dihydrooxadiazinones)

IT 4233-33-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidation of oxadiazinones by)

IT 60110-50-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and oxidation of)

IT 60110-49-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction with phenyldehydrourazole)

IT 60110-44-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction with sodium borodeuteride)

IT 60110-43-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reduction of)

IT 60110-47-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and ring closure of)

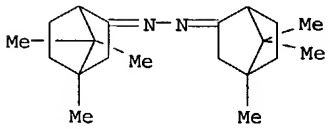
IT 60110-45-4P 60110-48-7P 60110-51-2P 60110-55-6P 60110-56-7P 60110-57-8P 60134-24-9P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

IT 60110-58-9P 60134-25-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation, photolysis, and thermolysis of)

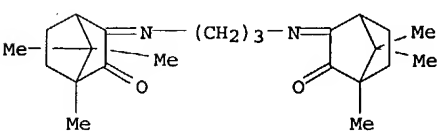
IT 7506-24-3P 19836-49-8P 19836-51-2P 19836-52-3P 19836-54-5P 60110-42-1P 60110-46-5P 60110-52-3P 60110-53-4P 60110-54-5P 60136-52-9P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation, thermolysis, and photolysis of)

IT 286-20-4 10373-78-1

RL: PRP (Properties)
(reaction with carbethoxyhydrazine)
IT 60110-59-0
RL: PRP (Properties)
(reaction with sodium borodeuteride)
IT 4114-31-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactions of)
IT **60110-57-8P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 60110-57-8 HCAPLUS
CN Bicyclo[2.2.1]heptan-2-one, 4,7,7-trimethyl-, (4,7,7-trimethylbicyclo[2.2.1]hept-2-ylidene)hydrazone (9CI) (CA INDEX NAME)



L49 ANSWER 25 OF 27 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1969:512901 HCAPLUS
DN 71:112901
ED Entered STN: 12 May 1984
TI Reaction of 1,2- and 1,3-dicarbonyl compounds with 1,3-diamines: some new 1,4-diazepines
AU McDougall, R. H.; Malik, S. H.
CS West Ham Coll. Technol., London, UK
SO Journal of the Chemical Society [Section] C: Organic (1969), (15), 2044-51
CODEN: JSOOAX; ISSN: 0022-4952
DT Journal
LA English
CC 28 (Heterocyclic Compounds (More Than One Hetero Atom))
OS CASREACT 71:112901
AB Glyoxal sodium hydrogen sulfite addition compound reacts with 2,4-diaminopentane dihydrochloride to yield 5,7-dimethylhexahydro-1,4-diazepin-2-one, but glyoxal monohydrate reacts with 1,3-diaminopropane and 2,4-diaminopentane under alkaline conditions to produce more complex substances. Cyclohexane-1,2-dione condenses with 1,3-Diaminopropane to form 2,3,4,6,7,8-hexahydro-1H-1,5-benzodiazepine, but di-imines formed from two mols. of dicarbonyl compound and one of diamine result from the reactions of 1,3-diaminopropane with benzil, camphorquinone, and isatin. Complex products are obtained from o-quinones and diaminopropane. 1,3-Diketones and 1,3-diamines react to produce open-chain compds. formed from two mols. of ketone and one of amine. 2,3-Dihydro-1H-1,4-diazepine is apparently formed from malonaldehyde and ethylenediamine, but 1,2-diaminocyclohexane reacts with malonaldehyde to give 1,2-bis(2-formylvinylamino)-cyclohexane.
ST diazepines via diaminopentanes; diaminopentanes diazepines via
IT 82-86-0P 84-11-7P 521-24-4P 524-42-5P 2435-53-2P 23927-23-3P 23927-24-4P 23927-25-5P 23927-61-9P **23927-62-0P** 23954-20-3P 23954-21-4P 23954-22-5P 23954-23-6P 23954-24-7P 23954-25-8P 23954-26-9P 23954-27-0P 23954-28-1P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
IT **23927-62-0P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 23927-62-0 HCAPLUS
CN Bicyclo[2.2.1]heptan-2-one, 3,3'-(1,3-propanediyldinitrilo)bis[1,7,7-trimethyl-, [1.alpha.,3(1'R*,4'S*),4.alpha.]-(+)- (9CI) (CA INDEX NAME)



L49 ANSWER 26 OF 27 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1963:8405 HCAPLUS
DN 58:8405
OREF 58:1326c-h,1327a-d
ED Entered STN: 22 Apr 2001
TI Reactions of the 2-bornyl radical. II. A free radical Wagner-Meerwein rearrangement
AU Berson, Jerome A.; Olsen, Carl J.; Walia, Jasjit Singh
CS Univ. Southern California, Los Angeles
SO Journal of the American Chemical Society (1962), 84, 3337-48
CODEN: JACSAT; ISSN: 0002-7863
DT Journal
LA Unavailable
CC 32 (Physical Organic Chemistry)
AB cf. CA 57, 11240.degree.. Racemic 2-azobornane (I), m. 164-5.degree. (N-filled capillary), was prepared from racemic camphor azine (II), m. 186-7.5.degree., by H-Pt reduction followed by KMnO4 oxidation of the initial 2-hydrazobornane (III). The azo link in I is probably trans, with the exo configuration at C-2. I, a convenient source of the 2-bornyl radical (IV), readily decomposed above 250.degree. in hexadecane (V) or Ph2O. The volatile products were removed in a vacuum line and the fraction passing a trap at 0.degree., containing 97% of the hydrocarbon products up to and including C10 fragments, was analyzed by gas chromatography. Decomposition in V yielded fragments from both solvent and I; all normal alkanes from C1 to C10 were identified. Olefins in the decomposition products were removed by percolation of a pentane solution of the volatile fraction through SiO2 gel. The identity of the products was established by comparison of the order of emergence and retention times on 4 different columns, by chromatography with authentic samples, by their chemical nature, and by preparative scale gas chromatography followed by infrared analysis. The products identified include bornane (VI), 1-p-menthene (VII), tricyclene (VIII), bornene (IX), and 2,3,3-trimethylnorbornane (isocamphane) (X), the Wagner-Meerwein rearrangement product. VII was apparently formed by .beta.-elimination from IV, with cleavage of the C1-C7bond, followed by H abstraction. .beta.-Elimination with cleavage of the C1-C6 bond would give RCH2CH2.bul. (R = 2,2,3-trimethyl-3-cyclopentyl) (XI) which, by H abstraction, would yield 1,5,5-trimethyl-4-ethylcyclopentene (XII). XII, b43 68-8.5.degree., n25D 1.4429, which was not isolated although evidence for its presence was obtained, was prepared from campholenealdehyde [(2,2,3-trimethyl-3-cyclopentenyl)acetaldehyde] (XIII) in 88% yield by Huang-Minlon reduction, and in 49% yield by the Cook-Linstead modification of the Wolff-Kishner reduction XIII (45.6 g.) and 7.5 g. N2H4.H2O in 50 ml. EtOH left 12 hrs. at room temperature, poured into H2O, and the mixture worked up through Et2O gave yellow XIII azine (XIV), b1.5 164-6.degree., n25D 1.5028, .lambda.alc.maximum 206 m.mu. (log .epsilon. 4.37). To a stirred solution of 7.0 g. LiAlH4 in 50 ml. Et2O was added, dropwise over 30 min., 24.4 g. XIV in 50 Ml. Et2O, the mixture stirred 12 hrs. at room temperature, cooled in ice, treated with 50 ml. cold 28% KOH, the Et2O layer removed, and the aqueous phase washed with Et2O. The combined Et2O solns. gave 89% hydrazo compound, b1 165-70.degree., which was dissolved in 25 ml. dry Et2O, stirred 5 hrs. with 34 g. yellow HgO, 10 g. anhydrous Na2SO4, and 100 ml. Et2O, the mixture filtered through kieselguhr, the solvent evaporated under N, and the residue distilled to give 65% 1-azobis-2-(2,2,3-trimethyl-3-cyclopentenyl)ethane (XV), b1.5 149-54.degree.. Redistn. gave pure XV, b1.5 150-2.degree., n25D 1.4858, .lambda.maximum 207, 360 m.mu. (log .epsilon. 3.88, 1.47). Decomposition of XV, under the same conditions as for I, generated XI from which was obtained a mixture of products containing X and VI-IX. XI is thus the probable intermediate in the formation of X. X, from either I or XV, is a 3:1 mixture of stereoisomers in which the major component probably has the endo configuration at the lone Me group. The distribution of products under various reaction conditions is tabulated. H abstraction from I and XV, especially when the initial concentration was high, and from V was observed. A possible mechanism for the formation of VIII is an intramol. carbeneolefin addition from XI. In some decompns. NH3 was formed. At low initial concns. of I and XV the decomposition kinetics are first order; the kinetic data are tabulated. The decomposition of I was affected by trace impurities and with some solvent batches little or no N was evolved. This reaction is suggested as an impurity-catalyzed disproportionation of I, or the isomeric camphor 2-bornylhydrazone (XVI), to II and III. II was found in the non-volatile residues together with some I (possibly regenerated from the readily oxidized III). XVI, m. 180-80.5.degree. (N-filled capillary) (95% EtOH), was prepared in 79% yield by refluxing, for 12 hrs. under N, 30 ml. EtOH containing 3.0 g. camphor, 2.6 g. NaOAc, 15 ml. H2O, and 1.8 g. racemic 2-bornylhydrazine hydrochloride, m. 251-2.degree. (decomposition),

(prepared by H-Pt reduction of racemic camphor acetylhydrazone, m. 189-90.5.degree., followed by treatment of the product with dry HCl). XVI reduced by H-Pt and the product oxidized with KMnO4 in Me2CO gave I. The reactivities of I and XV are normal since the rate consts. and activation parameters for their decompns. are close to those for simple azoalkanes (although the latter were decomposed in the gas phase). I is approx. 4 times as active as azoisopropane and XV is 6-7 times as active as azoethane. It is considered unlikely that bond delocalization in the alkyl groups of the azo compds. plays a significant role in the transition state that leads to loss of N, and unlikely that a mesomeric radical is the only intermediate in the Wagner-Meerwein rearrangement. H abstraction appears to be sterically rather than stereoelectronically controlled and the radical system gives more secondary product, VI, than tertiary, X. Thus, there is no analogy between the behavior of cations and radicals in the bornyl system. Part of the rearrangement may involve mesomeric intermediates but it is not the exclusive path; a major portion passes through classical radicals. This is compatible with the non-stereospecificity of H capture, the absence of rate enhancement in the azo decompns., and the dependence of the product composition on the source of the radicals, and also explains the absence of rearrangement and ring-opening when IV is generated at lower temps. since the cleavage step will have a high activation energy. 37 references.

IT Spectra, visible and ultraviolet
(of 1,1-azobis[2-(2,2,3-trimethyl-3-cyclopentenyl)ethane])

IT Activation energy, Heat of activation
Frequency factor, Preexponential factor
(of 2,2'-azobornane decomposition by heat)

IT Wagner-Meerwein rearrangement
(of 2-bornyl radical)

IT Entropy
(of activation of 2,2'-azobornane by heat)

IT Reaction kinetics and(or) Velocity
(of decomposition, of 2,2'-azobornane and 2,2'-bis(2,2,3-trimethyl-3-cyclopenten-1-yl)azoethane by heat)

IT Mass spectroscopy
(of solids)

IT 2,2'-Azobomane

IT 464-15-3, Bornane 464-17-5, 2-Bornene 473-19-8, Norbornane, 2,2,3-trimethyl- 508-32-7, Tricyclo[2.2.1.02,6]heptane, 1,7,7-trimethyl- 5502-88-5, p-Menth-1-ene
(formation in 2,2'-azobornane decomposition)

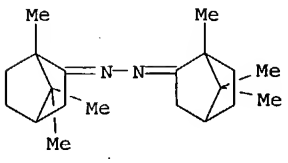
IT **47180-21-2**, Camphor, azine 52491-59-5, Cyclopentene, 4-ethyl-1,5,5-trimethyl- 90976-37-7, Cyclopentane, 1-chloro-3-ethyl-1,2,2-trimethyl-5-nitroso- 91087-16-0, 3-Cyclopentene-1-acetaldehyde, 2,2,3-trimethyl-, hydrazone 94676-28-5, Hydrazine, 1,2-bis[2-(2,2,3-trimethyl-3-cyclopenten-1-yl)ethyl]- 94681-90-0, 3-Cyclopentene-1-acetaldehyde, 2,2,3-trimethyl-, azine 95389-88-1, Hydrazine, (2-bornyl)-, hydrochloride 95706-56-2, Azoethane, 2,2'-bis(2,2,3-trimethyl-3-cyclopenten-1-yl)- 101700-26-9, Camphor, 2-bornylhydrazone 135866-41-0, Acetic acid, 2-bornylidenehydrazide
(preparation of)

IT 118659-24-8, 2-Bornyl
(reactions of)

IT **47180-21-2**, Camphor, azine
(preparation of)

RN 47180-21-2 HCAPLUS

CN Bicyclo[2.2.1]heptan-2-one, 1,7,7-trimethyl-, (1,7,7-trimethylbicyclo[2.2.1]hept-2-ylidene)hydrazone (9CI) (CA INDEX NAME)



L49 ANSWER 27 OF 27 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1937:61827 HCAPLUS

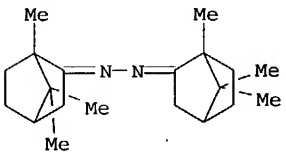
DN 31:61827

OREF 31:8526f-i

ED Entered STN: 16 Dec 2001

TI The catalytic hydrogenation of azines. VI. Comparative hydrogenation of

the ketazines of camphor and carvomenthone
AU Taipale, K. A.; Gutner, M. A.; Remiz, E. K.
SO Zhurnal Obshchei Khimii (1937), 7, 1378-89
CODEN: ZOKHA4; ISSN: 0044-460X
DT Journal
LA Unavailable
CC 10 (Organic Chemistry)
AB cf. C. A. 25, 2415. The ketazine of carvomenthone is hydrogenated 5 times faster than that of camphor over Pt black. Thus, the formation of the camphane bridge strongly raises the affinity capacity of the alicylic ring. The hydrogenation products are the symmetrically disubstituted hydrazines. Camphor ketazine gives 2-hydrazocamphane (I) m. 135-6.degree.. In air, this partly oxidizes to azocamphane (II), but the latter is better prepared by oxidizing I with KMnO4 or H2O2. I forms a monohydrochloride, m. 235.degree. (decomposition), and a mono-Bz derivative m. 137-8.degree.. II, m. 148-9.degree., [.alpha.]D19 -59.44.degree., is isomerized by HCl to C10H17NHN:C10H16.HCl, m. 200.degree. (decomposition). More vigorous treatment with HCl gives camphor and bornylhydrazine. Attempts to isolate the free base lead to tar formation.
IT Azines
(hydrogenation of)
IT Hydrogenation
(of azines)
IT Benzoic acid, 1,2-dibornylhydrazide
Camphane, 2,2'-azodi-
Camphane, 2,2'-hydrazodi-
Camphane, 2,2'-hydrazodi-, -HCl
Camphane, 2-hydrazino-
Camphor, bornylhydrazone-HCl
Hydrazine, 1,2-dibornyl-
Hydrazine, 1,2-dibornyl-, -HCl
Hydrazine, bornyl-
IT Carvomenthone, azine
(hydrogenation of)
IT **47180-21-2**, Camphor, azine
(hydrogenation of)
IT **47180-21-2**, Camphor, azine
(hydrogenation of)
RN 47180-21-2 HCAPLUS
CN Bicyclo[2.2.1]heptan-2-one, 1,7,7-trimethyl-, (1,7,7-trimethylbicyclo[2.2.1]hept-2-ylidene)hydrazone (9CI) (CA INDEX NAME)



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